

THE LEAD EXPOSURE REDUCTION ACT OF 1993

Y 4. P 96/10: S. HRG. 103-181

The Lead Exposure Reduction Act of...

HEARING
BEFORE THE
SUBCOMMITTEE ON
TOXIC SUBSTANCES, RESEARCH AND DEVELOPMENT
OF THE
COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
ONE HUNDRED THIRD CONGRESS

FIRST SESSION

ON

S. 729

A BILL TO AMEND THE TOXIC SUBSTANCES CONTROL ACT TO REDUCE
THE LEVELS OF LEAD IN THE ENVIRONMENT, AND FOR OTHER PUR-
POSES

JUNE 29, 1993

Printed for the use of the Committee on Environment and Public Works



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THE LEAD EXPOSURE REDUCTION ACT OF 1993

TUESDAY, JUNE 29, 1993

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON TOXIC SUBSTANCES, RESEARCH
AND DEVELOPMENT,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:33 a.m. in room 406, Dirksen Senate Office Building, Hon. Harry Reid [chairman of the subcommittee] presiding.

Present: Senators Reid, Lieberman, Lautenberg, and Smith.

OPENING STATEMENT OF HON. HARRY REID, U.S. SENATOR FROM THE STATE OF NEVADA

Senator REID. The subcommittee will come to order.

Today the subcommittee on Toxic Substances, Research and Development will hear testimony on the Lead Exposure Reduction Act of 1993, S. 729. This bill was introduced in April of this year because of the continuing need to minimize human exposure to lead, widely recognized by health and environmental officials as the number one health problem in American children.

In passing, let me note that for those of you who are TV news watchers, last night on McNeil-Lehrer they had a segment dealing with lead poisoning which I thought was very balanced.

Between three million and four million children are at risk. This means that about one out of every six pre-school children in the United States is a victim to lead poisoning. The effects of lead disease are untreatable, the harm is irreversible. But we're all exposed, not just children, but our children are at greater risk because of their age and because they're still growing.

When addressing any public health problem, the most basic principles hold that prevention is better than treating the damage after it has occurred. Although lead poisoning can be prevented, there is no effective treatment for chronic exposure, and the brain damage done by this toxin is irreversible.

This subcommittee has taken the lead in addressing this problem. We heard testimony from 17 witnesses and experts at a hearing on March 8, 1990. Two months later Senators Lieberman and I, along with Senators Bradley and Moynihan, introduced S. 2637, the Lead Exposure Reduction Act of 1990. On June 27th of that year, this subcommittee held hearings on S. 2637 and S. 5293. The Lead Ban Act of 1990 is the name of the latter. At this time, we heard testimony from 23 additional witnesses. The bill was reported then to the Senate floor.

At the commencement of the 102d Congress, the Lead Exposure Reduction Act was reintroduced as S. 391. Hearings were held on February 21, 1991, where an additional four witnesses testified. This bill was reported out of full committee. In the House of Representatives a similar bill, H.R. 730, was reported out of the House Committee on Energy and Commerce in 1992. In the meantime, significant portions of S. 391 were incorporated into the Housing and Community Development Act of 1992. On October 28th, President Bush signed this act into law, including Title X, the Residential Lead-Based Paint Hazard Reduction Act of 1992.

Lead hazards, however, continue urgently to call our attention. There are still many common lead-containing products to which we and the environment are needlessly exposed. My new bill, the Lead Exposure Reduction Act, phases out the use of many of these products and provides for the preparation of a list of lead-containing products to enhance public awareness. Children in schools and day care centers are thoughtlessly exposed to lead hazards on a daily basis. My bill provides for the inspection and reporting of these entities so that parents and school officials are alerted to those pervasive hazards. Lead-acid batteries continue to be dumped in landfills. My bill mandates recycling.

Today we'll hear the administration, environmental community, school officials, parents, and some of the businesses affected by S. 729, the bill before us. Concerning the school's portion of the bill, one of the issues where there was disagreement in the Senate was the manner in which the inspections and reporting would be funded. I feel strongly that at a time when State budgets are strained to their limits, the Federal Government cannot impose new obligations on the States without providing the necessary funds. These so-called unfunded mandates are the talk of all legislatures in our country. Recent newspaper articles show that State officials agree with the position that I've taken. My bill provides that the States' obligation to inspect and report kicks in only when monies are appropriated for this purpose by Congress. I can assure you that as a Member of the Appropriation Committee's Subcommittee on Labor, Health, Human Services, and Education, I'll do everything I can to see that funds are appropriated.

At the conclusion of this hearing, this subcommittee will have heard from a total of 53 witnesses on the lead issue over the years. Now that we have a Democratic administration that is committed to resolution of the health care crisis in this country and to addressing environmental problems, I hope we have the necessary set of circumstances to enable us to eradicate this hazard.

I'd like to now turn the time over to Senator Smith, who has taken significant interest in this issue, which I've appreciated.

Senator Smith?

OPENING STATEMENT OF HON. ROBERT SMITH, U.S. SENATOR FROM THE STATE OF NEW HAMPSHIRE

Senator SMITH. Good morning, Mr. Chairman.

Thank you also for holding this hearing today on the Lead Exposure Reduction Act. I want to commend you for your commitment to reducing the public's exposure to lead where health risks are in-

volved, and I want you to know that I would support you in that effort.

Regarding S. 729, however, I believe there are certain sections of the legislation that may have a solution without a problem. We certainly share the goal of reducing or eliminating lead uses where a health risk is evident. However, I want to have some assurance that we're not just legislating for the sake of legislating by adding regulation that is already occurring at EPA or some other agency.

It is well known that a major source of lead exposure comes from old lead-based paint on buildings, but EPA is currently in the process of implementing Title X of last year's housing bill, which will hopefully go a long way to addressing that problem. I'd like to hear from EPA, and I'm sure we will, as to the status of this effort and the scope of resources required for implementation, as well as the estimated impact on lead exposure levels.

I also would like some assurance that products and lead uses will not be banned where no reasonable substitute is available or, more importantly, where a regulatory burden is imposed and no significant health risk has been shown. Decisions such as this should be based on sound evidence, not just a guesstimate.

Finally, Mr. Chairman, regarding the schools and day care centers section, we must be mindful of the old Federal mandate issue where mandates are imposed on States and school districts without accompanying funding. As the Chairman knows, this is a serious problem that continues to be ignored, and I know you share this concern and commend you for including provisions that limit the requirements if no grant money is provided. Those limitations are very important and must be maintained.

I look forward to hearing the testimony today from the witnesses.

Thank you, Mr. Chairman.

Senator REID. Senator Lieberman, do you have a statement?

**OPENING STATEMENT OF HON. JOSEPH I. LIEBERMAN, U.S.
SENATOR FROM THE STATE OF CONNECTICUT**

Senator LIEBERMAN. I do, Mr. Chairman. Thank you.

Senator Smith, thank you for your continuing leadership in this area.

Mr. Chairman, the problems that you and I have been dealing with for now more than two years have been on the minds of people in Connecticut in recent weeks in a very graphic way. In Stratford, Connecticut, we have a situation as a result of dumping of industrial waste where extremely high levels of lead have been found on the playing fields of a local school, raising serious concerns about the health implications for the many students who have played there over the years.

The Connecticut Education Association recently completed a survey of public schools in Connecticut and found that over half were built before 1960 and are in need of major renovations. The survey also found that the youngest children tend to be educated in the oldest schools. Thirty-three percent of the primary grades are in schools that were built before 1949. Those schools, of course, are the ones that are most likely to have lead paint, and, therefore,

students in those schools may be exposed on a daily basis to lead and certainly would be exposed if testing is not done before renovations are begun.

I can tell you as an example that one of those schools, the Welch Annex School in my home town of New Haven, Connecticut, which was built in the early 1900's, is in very bad condition, and parents there have been struggling to get the school repaired. Finally this year roof repairs were made so that students no longer find dust and debris on their desk every morning, which was the pattern. Next the school will be replacing 132 windows, all of which it has been found have peeling lead-based paint. Welch is home to an all-day kindergarten program, and, of course, we may never know what the effect of that day-in/day-out exposure to that peeling paint has been.

All of this by way of showing just in my State of Connecticut how real these problems associated with lead and particularly lead paint are. It's why we've got to require that the Federal and State governments do all that they can to ensure that at the very least students being exposed to the most serious hazards are protected from lead poisoning. We've got to remember that many of our children spend as much, if not more, of their waking hours in day care centers and schools as they do in their own homes.

Mr. Chairman, since January of 1990, you and I have been talking about these issues to our colleagues, to the American people, talking about this invisible threat of lead to our children and to ourselves, and I'm pleased to say that under your leadership we have made genuine progress. In the last session of Congress, we passed legislation that will help protect those buying and renting homes from lead hazards. But lead poisoning remains the most devastating environmental health hazard facing America's children. It really does affect almost one in every nine pre-school children. Lead exposure primarily in the workplace also poses serious problems for men and women.

The double tragedy of lead poisoning is that its damage is irreversible, but entirely preventable. We have only ourselves to blame for this affliction and for our failure to conquer it. The good news is that every step that we take to reduce exposure to lead protects someone, particularly a child, from being poisoned. Now, having acted to address the problem of lead in homes, I think we've now got to ensure that children are safe in day care facilities and schools, where they spend so much of their days.

Mr. Chairman, you've said correctly that the bill being discussed today includes a version of school testing language about which concerns have been raised. We face, on the one hand, the understandable anger of State and local officials about unfunded mandates; on the other, the testimony of scientists, doctors, and public health officials that we are quite literally facing a lead poisoning epidemic. I hope to work with other Members of this committee to resolve the concerns about the funding question so that we can ensure that our children get the protection that they deserve.

Moving beyond the school and day care setting, we must bar lead hazards which pose risks to children, adults, and the environment, and this bill does that. The bill also requires that EPA issue regulations for labeling products which may pose a risk of lead expo-

sure, and it mandates the recycling of lead-acid batteries. It also directs EPA to evaluate new lead-based products for potential lead exposure risks.

Mr. Chairman, as lead poisons more and more people, we must take every step possible to eliminate lead hazards and those products which present risks of lead poisoning. This is a case where we simply cannot leave it to happen automatically. The law has to set some standards, and I'm confident standards that will be based on reason and science and the best data that we have about public health. Through the efforts of the public and private sector—this can't just be a force-feeding situation here; we've got to involve the private sector as it has been involved—we can and must eliminate this entirely preventable disease.

I thank you.

Senator REID. Thank you for your help all these years, Senator Lieberman.

Would our first panel of witnesses please come forward. We have Mr. Victor Kimm, Acting Assistant Administrator for Prevention, Pesticides, and Toxic Substances, with the EPA; Ms. Anne Guthrie, the Deputy Director, Alliance to End Childhood Lead Poisoning, testifying on behalf of the Environmental Defense Fund and the Alliance to End Childhood Lead Poisoning; Ms. Marlene Blum, Fairfax Council of PTAs, testifying on behalf of the National Parent-Teacher Association and the National Education Association; and Mr. Bernard O'Rourke, School Board Member, Essex Falls, New Jersey, testifying on behalf of the American Association of School Administrators.

Mr. O'Rourke, we'll hear from you first. I'm sure you've been instructed, but your oral testimony will be limited to five minutes, allowing the panel time to ask questions. That will apply to all four of you. Please, Mr. O'Rourke.

STATEMENT OF BERNARD O'ROURKE, SCHOOL BOARD MEMBER, ESSEX FELS SCHOOL DISTRICT, ESSEX FELS, NEW JERSEY, ON BEHALF OF THE NATIONAL SCHOOL BOARDS ASSOCIATION, ACCOMPANIED BY THOMAS A. SHANNON, EXECUTIVE DIRECTOR; MICHAEL A. RESNICK, ASSOCIATE EXECUTIVE DIRECTOR; AND LAURIE A. WESTLEY, CHIEF LEGISLATIVE COUNSEL

Mr. O'ROURKE. Thank you. My name is Bernie O'Rourke. I'm an elected school board member of the Essex Falls, New Jersey School District, and I represent the National School Boards Association, the NSBA. The National School Boards Association speaks on behalf of public education nationwide and represents 97,000 school board members like myself, who endeavor daily to provide an excellent public education for every child in the United States.

School board members like myself run for office to benefit the education of school children. The safety of their own children and the children of their community is a very real concern for all of us. We do not want anything to harm the health of the children we work so hard to serve. The National School Boards Association supports those school board members, and we endorse the mission of S.

One of any school district's most difficult tasks is to balance the many competing needs of the children. All of us share the goal of making each school into a perfect educational setting, with all the books, computers, and teachers needed, with pleasing buildings in excellent repair and devoid of any environmental threat, but this ideal is, unfortunately, not the current state of America's public education.

The first issue I'd like to deal with is the question of the priority of schools. In our common effort to ensure that our children are safe from lead poisoning, we must assess those areas where abatement is necessary and will most effectively reduce childhood exposure. In many cases, schools are unlikely to be the highest priority. In fact, during children's school age years, they spend about 10 percent of their total time in school.

This point was underscored in the letter which is attached to my testimony to the National School Boards Association from the doctor who authored the CDC statement on preventing lead poisoning in young children. Dr. Sue Bendor, who's chief of the Lead Poisoning Prevention Branch of the CDC, wrote, "As you know, we at the Centers for Disease Control emphasize that we must set priorities for identifying and abating those lead hazards that are likely to result in lead exposure in children. We are more concerned about day care centers than we are about schools."

So experts in the field clearly do not make the case that schools should be a priority for lead testing or for abatement. However, if the committee determines that schools are a priority, NSBA has many recommendations, and some of the most significant I would like to deal with briefly.

First of all, as regards who should conduct abatement, although the abatement is not required in this bill, nevertheless the notification process will create intense pressure to perform abatement. It is really a little bit disingenuous to suggest that parents can be told that there is lead in their child's school without demanding that it be abated. Lead abatement, however, is extremely costly and requires an understanding of both the environmental hazard and the available abatement procedures. A trained professional in the State environmental department would probably be the most effective person to handle the abatement, with an additional strong role, of course, for the local school board.

Next, as regards funding, we feel that Congress should make adequate funds available to those State environmental departments to conduct all needed lead testing and abatement. The Congressional Budget Office estimates that the inspection of lead in the paint and soil in school buildings and grounds is about \$1,000 for paint testing and \$3,600 for soil testing. Given that there are more than 70,000 schools with elementary age children in the United States, that comes up to a total cost for testing alone of more than \$320 million.

As regards abatement, we feel that the optimum would be a tripartite funding system where the Federal Government, the State government, and the local school districts all commit themselves to a financial partnership to abate the lead paint. Otherwise, lead abatement, because it is expressly mandated, could become a higher priority in the school districts than the fundamental busi-

ness of the education of children. Lead testing and abatement would receive all the funding they require if mandated, while educational programs would just have to make do with what was left.

Second, we come into maintenance of effort. It is very important to have the States conduct all of the lead testing and all of the abatement that we feel necessary. The School Boards Association opposes a Federal grant for States for lead testing and abatement. A condition for receiving a grant would be the maintenance of effort in funding for basic education, thereby ensuring that current educational funding priorities would not be lowered. This concept mirrors the bill's own maintenance of State efforts on lead inspections as requirements for Federal funds.

As regards liability, if schools are not responsible for testing, they should not be held responsible for any civil penalties that would flow from a violation. We feel that the penalties should be held against the State and not the school districts.

Finally, our recommendations on this matter. Number one, we feel that priorities should be set for testing and abatement sites based on risk, especially since children spend about 10 percent of their school age years in school. Second, lead testing and abatement in schools should be conducted by the States. Third, sufficient Federal funds for testing and abatement in all schools must be included in the bill, and separate funding should be provided for schools and day care centers. Fourth, States should be required to maintain their current educational funding levels as a condition for receiving a Federal grant for testing and abatement. Fifth, school districts should not be held liable for civil penalties if they do not have the responsibility for conducting testing.

The National School Boards Association looks forward to working with Senator Reid and the subcommittee in further refining this legislation, and we thank you for the opportunity to share our view.

Senator REID. We'll now hear from Ms. Marlene Blum.

STATEMENT OF MARLENE BLUM, FAIRFAX COUNTY COUNCIL OF PTAS, ON BEHALF OF THE NATIONAL PARENT-TEACHER ASSOCIATION AND THE NATIONAL EDUCATION ASSOCIATION

Ms. BLUM. Good morning, Senator Reid, and other Members of the subcommittee. My name is Marlene Blum. I am past President of the Fairfax County Council of PTAs in Fairfax, Virginia, an active member of the National PTA, a mother of two sons, and a citizen concerned about the health and well-being of all the children in our Nation's schools and day care centers.

I'm here today representing the nearly seven million parents, teachers, students, and child advocates in the National PTA and the two million members of the National Education Association. Our organizations have testified on the hazards of lead in the past, and we will continue our efforts at all levels of government to secure policies that eliminate environmental hazards from schools.

Today we've been asked to present our view on S. 729, the Lead Exposure Reduction Act of 1993, and to address several specific questions pertaining to the school and day care center lead testing provisions of the bill. My oral statement will be brief and focus on

this information. We have submitted a longer statement for the record, with background material on the hazards of lead and its effects on children.

In beginning, I must repeat one indisputable fact: The EPA, the Centers for Disease Control, the Surgeon General, and other Federal, environmental, and public health officials all agree that lead poisoning is the number one environmental threat facing children in America today. In the past few years, in response to this fact, the Federal Government has taken a number of positive steps to address the problem of childhood lead poisoning, yet despite these efforts, childhood lead poisoning continues to affect millions of children in schools and day care centers. The next step is to enact more comprehensive legislation requiring schools to test for lead hazards in their drinking water, paint, and soil.

Simply testing for lead hazards is not a costly operation. If schools do not find hazards, they will not need to take further action. If they do not test simply because they fear they cannot afford abatement, they are then knowingly continuing to expose children to serious environmental hazards. Besides, abatement does not mean removal of all lead-based paint. There are many strategies that can be used to reduce the hazards that need not be costly.

Lead poisoning is a problem that has been around for centuries. It will not go away overnight, nor will it disappear by itself. Action must be taken to eliminate the hazards. To eradicate the problem in schools, the Federal Government must work in partnership with State agencies and with local school districts and communities. All affected parties can work cooperatively to assure that public school buildings are safe from environmental hazards.

We believe the Federal Government must take action to set the policy that schools and day care centers be tested, first and foremost, to protect children. In addition to setting good public policy by reducing exposure to lead, testing and abatement efforts are cost effective. By preventing further exposure, we save money that would later be spent for health care and special education.

The school and day care testing provisions of S. 729 address the risk to children and, in fact, target children most at risk, since they apply only to buildings built before 1980 and to rooms in the schools used by the youngest children. We have a number of specific comments about S. 729, which, because of time limits, I will simply list, although I'm going to emphasize the first one.

The requirement to test, whether it be carried out by the State or the school district, must not be tied to the appropriation of Federal funds. We obviously do not expect school districts to assume the costs on their own, but to argue against testing because the cost of clean-up may be high is unconscionable. This approach acknowledges that there might be a problem, but we don't want to know because we can't afford to fix it.

We believe the requirements should be put in place, and school districts can discuss the issues with parents, teachers, and others in the school community to determine the best approach. Parents and others in the school community can discuss the problems locally and devise appropriate solutions once they are given the facts. If a school finds no hazard after testing, there is no problem. If they do,

they can assess the best strategy to eliminate the problem at the local level.

S. 729 should address the issue of lead in drinking water in schools and day care centers. The bill should address the risks of lead in soil. Parents and teachers ought to be notified about lead hazards even if a school or day care center has abated as needed. The section on risk disclosure must specify time lines for any abatement activities that need to be undertaken. The provisions related to renovation should be broadened. The authorization should be increased and expanded. And the testing approach we support gives schools and day care centers maximum flexibility in addressing any problems they identify.

We do not have definite numbers about how many public schools in this country have actual lead exposure problems from paint, soil, or drinking water. We do, however, know the problem is national in scope and requires strong Federal action to address it. Approximately 88 percent of public school buildings were built before 1980. The ban on lead-based paint was enacted in 1978. Furthermore, because of budget cuts, schools have been deferring needed maintenance, and poor maintenance in school buildings is directly linked to the incidence of environmental hazards. It is, therefore, extremely likely that many schools and day care centers have lead paint hazards, and we know schools have problems with drinking water.

All of this information clearly illustrates why we need a testing requirement. We will not know definitively if particular schools or day care centers have lead hazards unless we test. We have looked into testing programs. Some school districts have already tested their drinking water, and some have inspected for paint hazards. The issue is not a technical one about whether schools have the capability to test. The question rather centers on willingness and resources.

We have included with our longer statement an analysis we did of the cost of testing for lead hazards in schools and day care centers. In closing, I will restate that requiring schools and day care centers to test for lead hazards in paint and water is a critical step in the fight to end childhood lead poisoning.

Thank you for the opportunity to present our views, Mr. Chairman.

Senator REID. Anne Guthrie?

STATEMENT OF ANNE GUTHRIE, DEPUTY DIRECTOR, ALLIANCE TO END CHILDHOOD LEAD POISONING

Ms. GUTHRIE. Thank you, Mr. Chairman. We appreciate the opportunity to testify today. My name is Anne Guthrie, and I'm the Deputy Director for the Alliance To End Childhood Lead Poisoning, a national, non-profit, public interest organization focusing exclusively on ending the childhood lead poisoning epidemic. Our comprehensive agenda includes education, advocacy, and policy support.

I need to clarify one statement from the introduction before, which is that the Environmental Defense Fund has submitted a full statement for the record. My oral remarks will indicate where

I can speak jointly for the Alliance and EDF, but my entire statement is not a joint statement.

Senator REID. Thank you. Without objection, their statement will appear in the record.

Ms. GUTHRIE. Thank you. The Alliance commends this subcommittee for its continued commitment to protecting Americans from the serious threat of lead poisoning. In the past three years, there has been a great deal of progress in the national effort to prevent childhood lead poisoning; however, the challenges posed by lead's multiple sources and pathways are numerous and complex, so there is a great deal left to do. The Alliance stands ready to work with the Members and staff of this committee in any way possible.

We were asked to address several issues today, and I will address them in sequence. First is the issue of whether lead exposure is a continuing problem for humans and the environment. For this question, there is little doubt. Lead has been repeatedly and consistently shown to be toxic to both children and adults, and as scientific evidence has accumulated over the years, our level of concern has only heightened. We now know that levels of lead once thought to be safe are in fact toxic, and we know that children are particularly vulnerable to harm, as they absorb lead more readily than adults and appear to suffer worse effects due to their developing nervous systems. In recognition of this steadily accumulating body of evidence on lead's toxicity, the blood lead level of concern in children has been lowered at least four times over the past 30 years, most recently in October of 1991.

We are all at continued risk of exposure to lead from either historical or new sources. Most distressing, however, is the number of people suffering from lead poisoning. Federal agencies now estimate that 10 to 15 percent of American pre-schoolers have blood lead levels above the CDC's current level of concern, leading HHS and EPA to declare it the number one environmental health hazard to children. The available data about the prevalence of lead poisoning in adults is striking as well. In California, which requires reporting, elevated blood lead is the 10th most frequent condition among adults.

The issues addressed in S. 729 are indeed important in protecting children, and I'd like to comment on three of them now. Our written testimony contains additional detail.

S. 729 contains important measures to encourage more responsible uses of lead. The Alliance recognizes some legitimate ongoing uses of lead, but not all current uses are current or appropriate. The July 1993 issue of Consumer Reports reported that 650,000 backpacks, tote bags, fanny packs, and other carry-alls adorned with the children's characters Barney and Baby Bop had to be recalled because the surface coatings and inks "may contain excessive lead". In the vast majority of such cases, acceptable substitutes are available. A society already suffering the burden of undue exposure should certainly be examining its actions that result in additional exposures.

The Alliance concurs with the testimony of the Environmental Defense Fund with respect to the new use and product restriction and labeling provisions in sections 103 to 106. Section 108, which addresses classification of abatement debris, also focuses on a criti-

cal problem to widespread and cost effective abatement. There is no doubt that lead paint chips, stripper solvents, concentrated lead dust, and other debris are hazardous and should be treated and disposed of as such. At the same time, the great mass of debris from major abatement projects is bulky construction debris, which, if treated as hazardous waste, can increase the overall cost of abatement projects by 20 to 30 percent.

Currently, abatement debris is regulated under the Resource Conservation and Recovery Act; however, its application in the real world has caused tremendous confusion. This confusion arises in part because the RCRA waste testing requirements were really designed for application to large commercial industries and are difficult for small businesses to apply, since they are complex and provide no explicit guidance on testing abatement debris, such as doors and windows painted with lead-based paint.

The Alliance concurs with the legislation's intent to clarify disposal requirements, but we feel that guidelines are not enough. It is our understanding that EPA currently has the authority to undertake a rulemaking to bring abatement debris under TSCA regulation and to exempt this category of waste from RCRA regulation. Current TSCA provisions expressly define the abatement process to include the disposal of abatement debris, so no additional regulatory process should be needed for EPA to act. Congress has been pressing EPA for action on this issue for five years. Encouragement from this committee could be of enormous assistance in prompting timely action.

S. 729 also recognizes that schools and day care centers can pose real lead hazards to young children. These hazards clearly deserve attention, and the inspection requirements and grant provisions of S. 729 are appropriate steps to take toward protecting children. The Alliance would like to offer a few thoughts about issues related to effective implementation of such requirements. Our comments seek to link these provisions with the approaches being adopted nationwide to reduce lead-based paint hazards in housing as a result of Title X of last year's housing bill.

Title X utilizes risk-based strategies to set priorities for action, and we believe a similar approach should be incorporated into any scheme to address schools and day care centers. In particular, schools and day care centers provide one means of setting priorities that is impractical for houses—that is, the age of children in the facilities. Medical evidence shows that children's blood lead levels increase steadily up to 18 months of age and can change dramatically in a relatively short period of time. The most rapid rate of increase occurs between 6 and 12 months of age, and blood lead levels peak at 18 to 24 months. Therefore, efforts targeted to the youngest children should be a very high priority, suggesting that day care centers might be addressed as a priority before schools.

Title X also established a new type of hazard evaluation, adding the option of risk assessment to the existing option of inspection. While inspections under Title X are designed merely to identify the presence of lead-based paint on a surface-by-surface basis, risk assessments are designed to measure current exposure levels and to provide guidance about alternative strategies for reducing lead hazards. The range of interventions available to property owners and

the cost of implementing them is considerably broader following a risk assessment. The Alliance believes that the provisions of S. 729 should permit school and day care owners the same range of evaluation options as those provided under Title X.

In addition, given the complex nature of the issue——

Senator REID. Your time has expired.

Ms. GUTHRIE. Oh, I'm sorry.

Senator REID. No problem.

Ms. GUTHRIE. Thank you, Mr. Chairman.

Senator REID. Mr. Kimm?

STATEMENT OF VICTOR J. KIMM, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF PREVENTION, PESTICIDES, AND TOXIC SUBSTANCES, ENVIRONMENTAL PROTECTION AGENCY

Mr. KIMM. Good morning, Senator. It's a pleasure to be back before this committee again. I want to begin by commending both you and the other Members of this committee for this hearing and the continuing interest that you have in giving the agency the wherewithal that we need to deal with reducing the likelihood of lead poisoning. The need to deal with lead poisoning before it occurs, which we see as the primary thrust of your legislation, is very consistent with the agency's commitment to pollution prevention, and as such, we would like to work with you to try and find the most effective ways of doing that.

My testimony repeats what many have said about the continuing concern for the risk associated with lead poisoning, especially as it relates to children, and I don't think I need to repeat that here. I think it was this concern, though, for general protection that led to the enactment of Title X last year, which we are totally committed to implementing. The agency at the moment is aggressively implementing the principal regulatory requirements that really deal with trying to create an infrastructure so that this national assessment and clean-up can be done properly.

We have specific involvement and concerns with developing requirements and regulations that will deal with how the individuals who actually conduct the lead-based activities are trained, how the programs that train them are accredited, and how the contractors who perform the work will in fact be certified. We see this as a massive task in which are soliciting significant State participation and hope that with good minimum national requirements and strong State participation, we can kind of build an infrastructure to ensure that this work is done properly.

We are also in the midst of a major program aimed at updating and accrediting laboratories that are conducting the analysis, since the analysis will be the key for much of the future clean-up activities. We are also engaged in what is perhaps the most difficult task at the moment—dealing with trying to come up with health-based standards for exposure to contaminated dust, soil, and paint—and we believe that once this regulatory process is concluded, the framework that we put in place will be widely applied in terms of setting priorities, putting out specific abatement activities. Those activities will not only carry into housing, but they will carry into other public buildings and schools. So the infrastructure that we're

working on now under Title X we think will have a significant role in the future for the other concerns that you're addressing here.

Under Title X we have a number of education and outreach programs that I think you are somewhat familiar with. Most recently, with our public announcements and our addition of informational materials in Spanish language to the various materials that we have, we're hoping to reach concerned citizens and provide them with information about the simple things that they can do to reduce the likelihood of adverse effects on very young children through general sanitation and house cleaning, that kind of thing.

In the drinking water area, we are continuing to implement our 1991 regulation, which is getting utilities to look at monitoring in the most likely problem areas and taking on corrosion control activities. We are also very much involved with programs aimed at trying to reach schools both for monitoring purposes, looking at drinking water, fountains, and that kind of thing.

In the invitation, you asked for some information on our activities related to lead fishing sinkers. We at EPA recognize that lead, in addition to the health problems, also constitutes a significant environmental contaminant. In this case, we responded to a petition that we received pointing out that certain sized fishing sinkers were associated with waterfowl kills, including kills of endangered species. We've made a preliminary determination that we think there's an unreasonable risk here, and we have begun the regulatory process along that line.

It is significant, though, to note as we got into that process, we decided the lead sinkers constituted a risk, but then when we thought about the substitutes, we were seriously concerned that some of the potential substitutes may constitute as much of a problem to waterfowl as the lead itself, and so we're looking both at copper, zinc, and brass that were proposed as substitutes, as well as some other things that we think will not cause a problem.

Turning to your specific bill here as it relates to products, some principal activities that we have been undertaking dealt with looking at ways of getting a listing of all products that contain lead and then following up with a SNUR (Significant New Use Rule) under TSCA which would give us the notification of any new products that would constitute significant new lead uses. The heart of that matter, though, is that at the moment our available resources are totally committed to Title X, and we think that that's probably an appropriate risk-based priority.

If I might just move on to the schools and day care centers, we certainly think that dealing with the habitat in which children are most exposed is absolutely critical. We are concerned, as I think others here have mentioned, about the potential magnitude of the task and would like to suggest that we look toward some risk-based priorities. Certainly, the day care centers, since you have younger children whose patterns involve much more contact with their surroundings, would constitute, I think, on a risk base a potential place to initially begin.

We think phasing and timing is going to be critical to take on these huge tasks in an effective fashion, and, again, we look forward to working with the committee to try to perfect the legisla-

tion and a framework in which we can get this important task done.

Thank you very much.

Senator REID. Thank you, Mr. Kimm. You and I have been like old friends. This is the third or fourth time that you've been here on this issue, and we appreciate your being here.

What we're going to do is each Senator will take 10 minutes to ask questions of the panel. That way we'll see an end to the questions. Sometimes, it seems as if they never end.

When I first started in this, I was stunned by the amount of lead that's used in different things. For example, when someone came to me about lead sinkers for fishing, I thought there were a few pounds used each year. Each year two million pounds of lead are used for lead sinkers. I can imagine people's arms would get tired throwing that much lead out in the water. But that gives you an idea of how much lead is used. Two million pounds every year just for lead sinkers.

While I'm on that point, and this might be anticipating some questions, when we came here a few years ago, we were told by the people who made lead sinkers it's impossible to have anything different. In fact, a company called Water Gremlin wrote to Members of the committee stating that production of non-leaded sinkers may be possible, but certainly wouldn't be easy. But I congratulate that company. They've moved forward in that short period of time with an alternative product even in advance of the enactment of this bill. So I would hope that manufacturers of other products covered in this legislation will be inspired to follow that example.

It's also been very difficult for me, because I come from a mining State. I have been leading the charge in the Congress to protect the rights of miners and mining companies, and I was trying not to get involved in issues that would adversely affect any miners, whether in Nevada or otherwise. But the evidence is so overwhelming in this case that I had no choice but to go forward with this legislation.

Ms. Blum, you indicated there are competing needs of children, and I think that's certainly valid, but as your testimony indicated and as we saw in McNeil-Lehrer last night, the question is, where to spend the money? A little bit of prevention will save a lot of money down the road, and that was what your testimony was. Is that not right?

Ms. BLUM. Yes, indeed, when you're talking about a harm that you're going to prevent for the future, it's hard to document how much money you're saving, but it is clear that the long-term effects of neurological harm that you're doing to children, when you're spending money on their future health care or on special education programs for them, is a large cost.

Senator REID. In your testimony, Ms. Blum, you had an example of how they used to test to find out how sane a person was. They would walk into a room and the sink would be overflowing and they would hand that person a mop as he came in, and they would determine he was sane if he first turned the faucet off, your point being that we should turn the faucet off here.

Ms. BLUM. Right. It's the time to start.

Senator REID. Mr. O'Rourke, we have to examine very carefully, and I think you pointed it out very well, the civil liability aspect. We have to take a real close look, and we'll give it to our lawyers and have them look at civil liability very closely. What we don't want to do is create another area for lawyers because of passage of this legislation. I think it's extremely important that we have a number of escape clauses so that, as you indicate, in a case of an emergency or whatever comes up, we don't penalize school districts and reward lawyers, in effect. So that's something we'll take a look at, and that is your point, is it not?

Mr. O'ROURKE. Yes, absolutely. We're in the business of providing good education. Not to minimize the environmental aspect, but education is basic. We would like help when we have to test for environmental issues.

Senator REID. Also, through all this testimony we talk about 70,000 schools, but, there are some private schools, and we have not, in effect, legislated for the private schools, so it does lower the number some. The figures may be a little off, I think, because of that.

Mr. Kimm, we recognize that as a result of passing Title X last year, we put a tremendous amount of work on the EPA. Is that a fair statement?

Mr. KIMM. Fair statement.

Senator REID. And one of the criticisms that you, as a bureaucrat, receive and through all government and we, as elected officials, receive is that we pass a law and then the bureaucrats step in with all of these regulations. I am personally aware of the fact that not only do we, in this instance, require regulations being issued, promulgated, but we also provide no additional staff for you to do that. True?

Mr. KIMM. Yes, sir.

Senator REID. And without patting each other on the back, that makes it very, very difficult. Is that true?

Mr. KIMM. Yes.

Senator REID. And then your concern, as indicated clearly in your testimony, is that we dumped this load on you last year, and now if this thing passes, you'll have much more to do and you haven't even completed Title X yet. Is that a fair statement?

Mr. KIMM. Yes, I think that's a—our concern is with the available resources at every level these days, we need to carefully pick the priorities. We think that the Title X work is very important, it will build the infrastructure for the future, and that at the moment is our highest priority.

Senator REID. This subcommittee has jurisdiction over asbestos removal, but I do say that I wasn't here when that law passed. I think we have to use as an example asbestos removal, because it has proven to be extremely expensive, and in the minds of some—perhaps not a majority, but a significant minority—there are many who feel that the way that we've approached removing asbestos has been wrong. You, I'm sure, have heard that, haven't you?

Mr. KIMM. Yes, and in fact, in part, our interest in working with the Congress around Title X was to say one of the lessons from asbestos is we didn't have a trained infrastructure, and that's why we were so enthusiastic about taking on this training and certification

activity with the States as the necessary prerequisite for a major lead abatement program.

Senator REID. And I'm sure my friends here on the panel understand that when we started removing asbestos, there were no requirements for people to be trained or certified in any way to remove asbestos, and, as a result of that, there were a lot of people who were not qualified that were removing asbestos, in fact, there were many who were simply defrauding people in removing asbestos and causing more harm than good in the way they removed it. Fair statement?

Mr. KIMM. I think that is an accurate statement.

Senator REID. And with this lead abatement, we, as you've indicated, Mr. Kimm, want to get ahead of the curve, and even though it's burdensome, a lot of trouble to set up in conjunction with the States training programs, certification programs, in the long run it will pay off. Is that a fair statement?

Mr. KIMM. We firmly believe that. It's not a perfect solution, but it will certainly significantly improve the way we'll go at solving the problem, yes.

Senator REID. I think the one thing we have going for us is that asbestos, when it is removed, causes what I've learned are known as these "friable" things floating around—that's the name they use—and it causes lung cancer, and it can do it with just a fiber or two, whereas I think it's clear that in an older person that exposure to lead is not that instantaneously significant. So we do have a little bit of leeway with lead that we didn't have with asbestos. Is that right?

Mr. KIMM. I think that's a reasonable statement, yes, sir.

Senator REID. Senator Smith?

Senator SMITH. Thank you, Mr. Chairman.

Ms. Blum, in your statement, you indicated the requirement to test, whether it be carried out by the State or the school district, must not be tied to the appropriation of Federal funds. Recognizing, as we all do, the problem with lead and especially with children—and I share your concern there, and, of course, we ought to do everything in our power with the resources, somewhat limited, I might add, to deal with that. But how would you—when you place that kind of a covenant on a community, how do you reconcile competing risks?

For example, supposing that community had a school with lead in the paint and, say, in the water pipes, and they also had a Superfund site, they had toxins in their water that needed to be addressed, maybe they had a spent nuclear waste site somewhere and they had a landfill problem, asbestos perhaps in the school. Why should we dictate to them what their priorities are? Don't you think that's the community's responsibility to assess those risks, prioritize them in terms of how they would want to address them?

Ms. BLUM. I hope there's no school system that has all of those problems, although I suppose it's—

Senator SMITH. I think you might be surprised. Community, not school system.

Ms. BLUM. Right. Well, first of all, as far as the lead abatement goes, we're talking initially about testing, and there shouldn't be an assumption that if you test, you will find that there are major

problems. The initial requirement is to test and for the Federal Government to set some standards so that they're universal, they're consistent throughout the country, so that those requirements are met as far as testing goes and obviously so that those who test know what they're doing and are professionally qualified to do it.

The assumption is that there's a major expense involved just beyond that, and that's not necessarily the case. But if you don't test and requirements are not set to test, then how will we even know in any school system whether there is a problem or not? Some of the other things you mentioned are fairly obvious in a community, but lead is so unobtrusive—in other words, you don't know until you test a child's blood level or you see some neurological damage in a child or a particular group of children that there's been lead poisoning, and by that time it's too late to fix it for that particular child.

Senator SMITH. Assuming the test is done and the test, unfortunately, shows that there is a lead problem, and there are other environmental problems within the community, my question just is who, in your opinion, should specifically select the priority of risks?

Ms. BLUM. We suggest that at the local level—certainly, we would like to see funding both on the State and Federal level available to help schools systems. That's obvious. On the other hand, it is also true that if parents and other members of the community at the local level are well informed about the hazards to their children, then they should take the proper steps.

I could, for example, tell you that in Fairfax County when the initial requirements, which were voluntary—when the initial testing program was enacted in 1987 for lead in the water, Fairfax County voluntarily did that testing, and it was expensive, but it was not excessively expensive. They tested all the water coolers in our schools, not just the ones in the elementary schools, and they tested 855 coolers. They had to replace 63 of them because of lead, and the total cost, including testing and replacing the coolers—not the cost of labor, because they used their staff to do the initial gathering of the samples, but the laboratory fees and the replacement coolers—this was in 1988—the total cost was \$32,496, which did remove a serious hazard to children's health and yet was not exceedingly expensive.

Senator SMITH. If there is a test which indicates that there is lead, would you follow that with a mandate for abatement?

Ms. BLUM. Yes, I would.

Senator SMITH. Even if other risks were prioritized in the community as well, so, in other words, there would be accompanying mandates for something else, perhaps cleaning the air or the water, some other toxin—

Ms. BLUM. I don't think I can answer that question generically. I think it has to be—I think the community would have to look at the risks and weigh them.

Senator SMITH. But my point is the community doesn't have that option if you throw the mandate on the abatement at them unilaterally with a focus on one area—in this case, lead poisoning. If we do that with all of the other environmental problems we face, then the community gets hit with several of these mandates without

having the opportunity to choose their own prioritization. That's my point.

Let me move to you, Mr. O'Rourke.

Am I out of time, Mr. Chairman?

Senator REID. You have more time. Not much, but a little.

Senator SMITH. All right.

Senator REID. We'll take another round.

Senator SMITH. How much time to do you estimate, Mr. O'Rourke, that a child spends in school in a lifetime?

Mr. O'ROURKE. Well, we came up with a figure of around 10 percent, because if you base it on a 365-day year, kids are in school approximately 180 days—I know it varies from State to State—maybe five hours per day. So that adds up to about 10 percent of their total time.

Senator SMITH. It's possible, then, that you could have a situation where you could remove the lead in the school, and the child could still be subjected to lead in other areas of the environment 90 percent of the time.

Mr. O'ROURKE. Absolutely. I would imagine the home. They spend, obviously, a lot more time in the home. But there are other areas, too, yes.

Senator SMITH. You said in your testimony that about 70,000 schools covered just to test would cost about \$320 million.

Mr. O'ROURKE. That's right.

Senator SMITH. How much would it cost for abatement, do you believe?

Mr. O'ROURKE. Abatement is impossible to estimate, because it can be extremely costly. I think elsewhere in the testimony—I didn't read it orally, but it's in the record. There's a school in Chicago where the abatement is only two-thirds completed. It's a single school. It's already cost them \$400,000. It really depends on what the problem is. The one in Fairfax County may have been at the low end of the scale, this may be at the high end. But it's very difficult to put an estimate. We figured that if 10 percent of the schools covered in the bill needed the level of abatement as the one in Chicago, then it would run \$3 billion. But that's just a pure guess. It's a big number.

Senator SMITH. Well, I see the red light on, Mr. Chairman, so I'll stop.

Senator REID. Senator Lieberman?

Senator LIEBERMAN. Thank you, Mr. Chairman. I want to continue this discussion of the inspection question. I do want to indicate two things for the record about Mr. O'Rourke's testimony.

One is that you have endorsed a tripartite funding system when it comes to testing, which I appreciate. Not to give the impression that the Boards are against pushing it off to somebody else, but you're calling for a Federal, State, and local partnership. The second is that in the next sentence of your statement, you indicate that lead abatement is expressly mandated, and I just wanted to clarify for you and for the record that in this bill lead abatement is not mandated, that only the testing is mandated.

In my opening statement, Ms. Blum, I mentioned some numbers from a Connecticut Education Association survey about the age of buildings. Has the PTA or, for that matter, the National Boards,

Mr. O'Rourke, got any data to indicate the number of schools around the country that might be of an age where they are likely to have lead paint in them?

Mr. O'ROURKE. Rourke. We don't have any.

Senator LIEBERMAN. Ms. Blum, do you have that?

Ms. BLUM. Well, yes, we do, but it's obviously an estimate. We are looking just at elementary schools, because the concern is mostly about the younger children, and we subtract those that were built after 1980, because lead in paint was enacted in 1978, and we come up with 48,536 public elementary schools built before 1980. Then we also have some information on non-public elementary schools and came up with 21,627.

That question was brought up before, and what we came up with was 46,775 of the total universe of elementary schools eligible for funding based on the EPA model developed for the asbestos in the school programs, that one-third of the schools will not qualify for Federal assistance on the basis of financial need, so we subtracted one-third. But, again, these are estimates.

Senator LIEBERMAN. OK. Those are obviously substantial numbers. Let me ask this baseline question. Do I take it that everyone on the panel—I exclude you for the moment, Mr. Kimm—agrees that there ought to be testing, and the question only is who should pay for it? Testing of schools and day care facilities. So the question is really only who's going to—not only, but the question is who's going to pay.

There is a significant difference in estimates between the PTA and your association, Mr. O'Rourke, and I don't need to get into it now, but it does—for instance, in the PTA's testimony, they estimate that testing all day care centers licensed would cost \$39.1 million and testing of schools, approximately \$49 million, and your number is a lot higher, Mr. O'Rourke. I don't need to invite that debate now, but I'd be interested, if you would, in having you sit with each other and compare the basis of your numbers and then submit a response to us later so we have some sense of where the number might be.

Part of the question here is whether we can prioritize, and I wanted to invite some answers on that, and maybe I'll start with you, Ms. Guthrie. You had an interesting statement in your testimony where you suggest that schools and day care centers should have the flexibility to do either inspections or risk assessment. I gather in this case a risk assessment would not inspect, but assume that there's a lead problem and then assess how to deal with it, and in that sense perhaps cost less than an inspection. Would you talk a little about that?

Ms. GUTHRIE. Sure. Title X tried to recognize that there is going to be a huge new infrastructure out there and tried to provide alternative ways for people to attack the problem of lead-based paint hazards. Title X sets up two new professions, if you will—inspectors and risk assessors—and a risk assessor, at least in concept—we're waiting for the regulations and training courses to be completed—is going to be somebody who has more extensive training and is qualified to make more complicated recommendations about things.

An inspection is sort of a black and white exercise. You take an X-ray machine and go in and determine if there's lead-based paint there, and then you are likely to take it out. In risk assessment, you can make some qualitative judgments about the nature and extent of hazards, whether it's necessary to remove every piece of paint or whether there are other alternative permanent or interim measures that could be cost saving but, at the same time, protective of children.

Senator LIEBERMAN. Am I right in saying that a risk assessment assumes that there is a lead problem in the paint in the case of the schools?

Ms. GUTHRIE. Not necessarily.

Senator LIEBERMAN. So is it, therefore, not a substitute for an inspection, or is it?

Ms. GUTHRIE. It's an alternative to an inspection, yes.

Senator LIEBERMAN. Likely to be less costly?

Ms. GUTHRIE. Not necessarily. It may be more expensive because of the level of training required for the person to do it, but the resulting intervention options for the property owner may in fact be more inexpensive because they can be better targeted.

Senator LIEBERMAN. If you had to—and you've talked, some of you, about this already, but if you had to prioritize because of our concern about cost, and it's an awkward business to prioritize when we're talking about kids' health, but how would you do it? I'd invite Mr. O'Rourke, Ms. Guthrie, Ms. Blum each to answer this, if you would. What would be your top priority if you were going to just say, "We're not going to test every school building or every day care facility, but here are our top two priorities"?

Do you want to start, Ms. Guthrie?

Ms. GUTHRIE. Sure. The first two indicators that the Alliance would use, the first would be the age of the building, since that's the best proxy for the likely use of lead paint and the degree of hazard posed by that paint and the second would be the age of children, because clearly the—

Senator LIEBERMAN. More likely to check the younger.

Ms. GUTHRIE. Right.

Senator LIEBERMAN. Mr. O'Rourke?

Mr. O'Rourke. I think we'd have the same feeling. Younger children in day care centers in particular and the older buildings.

Senator LIEBERMAN. What would be a cut-off time for the buildings if you were going to prioritize?

Ms. GUTHRIE. From 1978 to 1980 is when lead-based paint went out of use, but in fact the amount of lead in paint was declining over the years, so in fact a staggered approach could be used, putting the oldest buildings first.

Senator LIEBERMAN. Do you agree about the age of children, Ms. Blum?

Ms. BLUM. Yes.

Senator LIEBERMAN. I mean, obviously, day care facilities have younger children, but clearly a lot of schools have younger children, too. So what's the—

Ms. BLUM. Obviously, secondary schools, high schools and intermediate schools, would be less of a priority, and the elementary

schools where you have children six years old and younger would be the priority.

Senator LIEBERMAN. OK. Thank you all.

Thank you, Mr. Chairman.

Senator REID. Thank you, Mr. Lieberman.

One of the questions, in follow-up to what Senator Lieberman said, if we did the inspections on a phased-in basis, that's all the more reason, Mr. O'Rourke, that we have to take a look at that civil liability section.

Mr. O'ROURKE. Rourke. Absolutely.

Senator REID. Because, in fact, if it weren't done maybe sooner rather than later, there may be some civil remedy that would lie and cause all the States to have to respond. As the law is written, and this is in opposition to your testimony, we think the law now puts the responsibility with the States, not the individual school districts.

Mr. O'ROURKE. Rourke. Right.

Senator REID. But, anyway, you're the one that raised that initially, and I think it's an excellent point, and I've instructed staff to take a close look at that liability. I've said this before, but since coming back to Washington and giving up my former occupation as a lawyer, I've become more concerned about how they are not able to make money.

[Laughter.]

Senator REID. Mr. O'Rourke, in your testimony, you state that penalties should be imposed on the State, and I want to point out, as I have, to see if you agree, that this does not put the responsibility on the school districts.

Mr. O'ROURKE. Rourke. That's right.

Senator REID. OK. We agree with that.

Ms. Guthrie, in your testimony, you state that humans continue to be exposed to lead through new products. To what extent does exposure to new products threaten public health and the environment, as far as you and your organization are concerned?

Ms. GUTHRIE. The Alliance, as an institution, has tried to focus on the hazards that are posing the most immediate threat to children, and so we have started with lead-based paint. But it is clear—and this raises the analogy that you liked from someone's statement about the faucet and the mop—that it simply makes no sense to continue to introduce products into use which will ultimately, even if it's not until after disposal, wind up in the environment and further contaminate it.

Senator REID. One of the real controversial areas of this legislation is the new use provision, and if at full committee or on the floor we're going to have a problem, I think it's going to be with the new use provision, and unless we get a little more help from organizations like you or the Environmental Defense Fund, I think that provision could really have some problems.

In your testimony, Ms. Guthrie, you talk about substitutes to lead-containing products, and in the EDF testimony, Ms. Florini discusses substitutes for lead chromate paints. To what extent do substitutes for these paints and other products that are banned by the bill currently exist?

Ms. GUTHRIE. I'm afraid that this is a question that's a little bit out of my area of expertise, and I'd be more comfortable if we could submit something for the record, if that's all right.

Senator REID. Would you do that?

Ms. GUTHRIE. I'd be happy to. (See p. 59.)

Senator REID. And as soon as possible. We're going to try to mark this up. Also, Ms. Guthrie, EPA discusses its strategy for reducing lead exposure. You express your support for S. 729 by stating that it addresses unmet needs. What are these unmet needs, in the estimation of your organization, and how does this bill go beyond EPA's lead strategy? It appears you would like a little time to respond to that.

Ms. GUTHRIE. Yes. That's a broad question.

Senator REID. So you'll do that in writing for the record as soon as possible?

Ms. GUTHRIE. Yes, sir.

Senator REID. Senator Smith, do you have some questions? I've covered all my questions.

Senator SMITH. Just a couple more, Mr. Chairman.

Mr. Kimm, given the two-year time frame from production to consumer market in the fishing tackle industry, and also by your own comments that perhaps some of the possible substitutes may or may not be worse or at least have as bad an impact, what is your comment on the disruption of such a ban to the industry, on the total ban on sinkers and lures? You've got a two-year time frame here. Is a total ban on lead sinkers and lures necessary to protect human health, in your opinion, and the environment?

Mr. KIMM. One, we're not talking about a total ban, we're talking about sinkers below a certain size that affect the wildlife. Second, we'll use the rulemaking process both to make the case for unreasonable risk and to sort out the specifics how we would mitigate against a gigantic dislocation in the marketplace. There are existing stocks. It's a fairly complicated process, but we'll use the rulemaking process to come up with an effective way of making it happen.

Senator SMITH. So your concern more is with the wildlife ingesting these than it is with any other environmental concern?

Mr. KIMM. In this particular case, yes. There are documented kills, including some endangered species.

Senator SMITH. The problem, though, is that the legislation before us is a total ban, is it not?

Mr. KIMM. Well, I'm describing what we are undertaking under TSCA in response to a petition. That's kind of the ongoing activities we have in front of us.

Senator SMITH. So you would be more inclined to support legislation that was not a total ban, but perhaps had some change in size?

Mr. KIMM. I'm not sure—again, you'd have to look at the exposure patterns and perception of risks and try to put the resources where you think you could get the maximum risk reduction. That would be the way the agency would look at that kind of problem. I don't think that we're in a position to say we're in favor of a ban or not a ban. I think in all instances we need to—I think one of the things we're learning is we need to be real careful about substitutes. But I think there certainly are products and exposure sce-

narios that we can eliminate, and as many of the speakers have said, if we don't get ahead of this problem, we're just going to make the problem of background exposures larger and larger in the future.

Senator SMITH. Well, OK. The essence of Senator Reid's legislation is very positive. There are some differences on certain areas of it, and so we're trying to work those out, and I'm just saying that if, in fact, the substitutes may also be harmful in some way, or at least the jury's still out on that, and if in fact a total ban would cause a major disruption in the industry, then the alternative that you suggested, which is to have a scale of size come into play here, is a reasonable compromise, in your opinion?

Mr. KIMM. Well, the size of the sinker goes to the damage to the waterfowl. Above a certain size, the waterfowl are very unlikely to pick up these sinkers. So we're trying to tailor the solution to the risk that we're trying to avoid.

Senator SMITH. Mr. Kimm, let me move to another area. There are, obviously, legitimate reasons to ban lead solder in plumbing fixtures and water pipes, and I agree with that and support that wholeheartedly. However, I am concerned that perhaps there may be an inclination here to move to other manufactured articles. Is there any evidence that solder, for example, used in electronics or any electronic application, such as circuit boards—is there any evidence that solder used in that capacity is a health threat?

Mr. KIMM. It is certainly much less of a risk than lead solder used in drinking water where it does clearly leech into the system and end up being exposed to the people that deal with it. It's a different exposure scenario.

Senator SMITH. I might ask either you, Ms. Guthrie, or Ms. Blum, again, we're trying to be reasonable, but, I suppose a child could get hold of a circuit board in some way and put it in his mouth or something, but the bottom line is if lead is not in toys, if it's banned from toys, it's banned from water pipes, paint, and so forth, where we cut the accessibility to it dramatically, is it reasonable to assume that we could allow it in circuit boards, in your opinion, or is that something you would not accept?

Ms. GUTHRIE. The Alliance certainly agrees that there are appropriate uses of lead, but we're just saying that some careful thought should be given to what those are and how the products are disposed of after they're used.

Senator SMITH. Do you agree?

Ms. BLUM. [Witness nods affirmatively.]

Senator SMITH. Good. Thank you.

Thank you, Mr. Chairman. Mr. Chairman, I might say, I, unfortunately, have to go to the floor for a few minutes, and I fully intend to be back. I did not expect this. It's a nomination, and I hope to be back for the second panel. I apologize to you and to the next panel of witnesses.

Senator REID. No problem.

Thank you all very much.

Mr. KIMM. Senator, I wonder if I might add one more remark that I missed at the front end of this, which is just to say that we at EPA are very concerned about this, and I wanted to call your attention to the fact that the Clinton Administration budget for

1994 has a \$15 million increase for lead-related activities, which almost doubles our present level of funding by itself. We're presently spending about \$8 million a year. This is a request for \$15 million more, and \$10 million of that will be grants to States. So we're very much committed.

These priorities and the budget process for 1994 are extremely difficult, but I think we at the agency see a high priority, and we're very anxious to get on with the job with the States and get this infrastructure in place.

Thank you.

Senator REID. Thank you very much.

Senator SMITH. I guess what I'm trying to figure out, Mr. Chairman, is how your kid can cast a line in the water with an 8-ounce sinker to catch a 4- or 5-ounce sunfish. You know, that's the problem of more immediate concern to some of our fishermen out there. Some weights are a little too heavy for the fish that you're trying to catch, but I think we can probably work it out.

Senator REID. Mr. Kimm, thank you very much for adding that.

The next panel will consist of Mr. Bob Muth, who has spent as much time in my office the last few years as some of my employees.

[Laughter.]

Senator REID. Mr. Muth is Vice President, Government and Public Affairs of ASARCO, testifying on behalf of the Lead Industries of America; Mr. Arthur Hawkins, President and CEO of the Exide Corporation of Troy, Michigan, testifying on behalf of the Battery Council International; Mr. Gary Shapiro, Vice President, Consumer Electronics Group, Electronics Industries Association, in Washington, D.C.; Mr. Bill Wilson, CEO of PRADCO, testifying on behalf of the American Fishing Manufacturers and Tackle Association; and Mr. James E. Boldt, Vice President, Wayne Pigments Corporation, Milwaukee, Wisconsin, testifying on behalf of the Color Pigments Manufacturers Association.

Good morning, everyone.

We'll first hear from you, Mr. Muth.

STATEMENT OF ROBERT J. MUTH, VICE PRESIDENT, ASARCO INCORPORATED, ON BEHALF OF LEAD INDUSTRIES ASSOCIATION, INC.

Mr. MUTH. Thank you, sir. Senator Reid, my name is Bob Muth. I'm appearing this morning on behalf of the Lead Industries Association, which is an association of primary lead miners and refiners, recyclers, battery producers, producers of lead solder, oxides, and chemicals, fabricated products, weights, and other miscellaneous lead products.

My time is severely limited, and I would rather speak slowly, so I will speak directly only to those provisions of the bill that are of broad concern to lead producers and consumers generally. Our detailed comments are in our written testimony, which I trust you will accept for the record.

Senator REID. Without objection, your prepared statement will appear in the record.

Mr. MUTH. Thank you, sir. You've asked whether exposure to lead is a matter of continuing concern. This morning you've heard the views of others who are concerned chiefly with exposures to lead-pigmented paint on the walls of older houses and other structures. I should note that industry began phasing out such uses of lead paint in the 1950's. You've heard much less and, I would suggest, only the vaguest sort of generalities about exposure to today's uses of lead.

As to these products and applications, we believe the answer to your question is, with a few possible exceptions, no. These exceptions would include, four applications identified by EPA and currently being examined by the agency. They are plumbing fittings, certain paints, certain fishing weights, and certain uses of lead solder.

Overall, we believe today's uses of lead in the United States are safe and beneficial, and this goes to the heart of our concern with S. 729. In particular, section 404 is our principal concern, the so-called new use provision. Section 404 does, in a sense, deal with new uses, but almost incidentally. Though perhaps not so intended by the committee, we believe section 404 creates a mechanism that surely will be abused by those whose aim is the destruction of our industry. Let me explain.

That section calls upon EPA to create an inventory of all lead-containing products. Since any item not on the list becomes a new product, it is of some importance just how products are listed and how they are grouped into categories. Some of us think of this inventory approach as being literally an impossible task. At the very least, it will be a multi-year resource-intensive and highly contentious process. Yet if EPA should fail to complete the task on time, a hammer provision goes into effect that has no relation to reality. For example, the common lead-impregnated apron that you and I are familiar with in our dentist's office would become a "new product" if the inventory is not finished in a timely fashion.

Assuming, however, that we have in the end some sort of inventory, EPA must then decide which products may reasonably be anticipated to present an unreasonable risk in manufacture, use, or disposal. These products then go on a concern list or, as it is somewhat wryly termed in the bill, "the list." It is here that the people I represent see the greatest and most damaging likelihood of abuse. Let me try and give an example so you'll understand what our concern is.

Earlier on, several years ago, the Environmental Defense Fund widely contended that disposal of lead-containing consumer products in municipal solid waste caused harmful releases of lead from landfills and from combustors. On the basis of nothing more than these assertions, they induced several States to adopt packaging restrictions for heavy metals. Now, since then, we have shown through studies not done for us, but for the EPA and others, that those contentions were wholly without factual support and that indeed the facts were otherwise—that in today's municipal waste combustors and post-RCRA landfills, lead does not present risks to health or the environment. Yet even today EDF still supports the packaging ban on the basis that something may someday leach from a landfill.

If section 404 becomes law, we can expect to hear the same factually bereft assertion advanced, all with due publicity against any and every lead use in support of a claim that the use should be listed as potentially presenting an unreasonable risk.

Finally, for those products which EPA finds may produce the requisite level of risk under some specified circumstance, the agency will then have to decide the maximum lead content in any product, expressed as a percentage of the weight of the product, because use of a greater percentage will constitute a new use. But what does this mean? Does it mean which battery contains the most lead? That's easy. The biggest one. Which auto contains the most solder? Which TV tube contains the most protective lead shielding? What does it mean and where does it get us?

At the end of the day, Mr. Chairman, we have a process that can be made enormously costly and can end in an essentially unproven indictment of lead products such as to drive away all but the most determined consumer from the material. I doubt that this is what you intended, but this is how we believe the section will be used against us and against the public interest.

I believe my time is up. I will stop.

Senator REID. Thank you very much.

Mr. MUTH. I will be happy to entertain questions.

Senator REID. Mr. Hawkins?

STATEMENT OF ARTHUR M. HAWKINS, PRESIDENT AND CHIEF EXECUTIVE OFFICER, EXIDE CORPORATION, ON BEHALF OF THE BATTERY COUNCIL INTERNATIONAL

Mr. HAWKINS. Thank you, Senator Reid. I appreciate your staying to listen to the testimony. Thank you.

Senator REID. I would say also publicly here, Mr. Hawkins, from the very beginning—and that goes back years ago now in developing this testimony—the battery manufacturers and the Battery Council have been most cooperative, and it's appreciated by me, the committee, and the staffs. You've been very helpful, and I appreciate that.

Mr. HAWKINS. Well, we appreciate your support, Senator.

Senator REID. And it's not always because we agreed, because initially there were a lot of things to work out, but you've been very diligent. Anyway, that's enough of that.

Mr. HAWKINS. First of all, my name is Arthur Hawkins, and I'm President and CEO of Exide Corporation. We're the largest battery maker, as you know, and we're certainly the oldest, founded back in 1888. I'm speaking today for and on behalf of the Battery Council International. We have over 250 members worldwide, and each of our members is involved in some phase of lead battery manufacturing, supply, distribution, or recycling. Our membership here in the U.S. represents approximately 99 percent of the Nation's lead battery manufacturing capacity and approximately 85 percent of its recycling capacity.

As you know, Senator, based on the most current data available, over 96 percent of the lead used in the manufacture of lead-acid batteries is recycled, and that high recycling rate is a direct result of our industry's efforts to promote battery recycling. In fact, for

every year since 1987, the year State battery recycling laws first became effective, the recycling rate for lead-acid batteries has been over 90 percent. In fact, if you see the attached chart there, you'll notice that we've continued those high recycling rates notwithstanding the fact that the lead price fluctuations during these periods has been substantial.

We attribute the high recycling rate to the mandatory recycling laws in place in 42 States in which 87 percent of the Nation's population resides. These mandatory State recycling laws are based substantially on model legislation promoted by BCI. That legislation bans the disposal and incineration of lead batteries and mandates their return for recycling through a reverse distribution system.

Let me now turn to the issue at hand, S. 729, the Lead Exposure Reduction Act. We are pleased that section 406 of S. 729 incorporates much of the BCI model recycling legislation. We believe, however, that several improvements could be made.

First, we note that as currently drafted, section 406 does not prohibit States from adopting or enforcing battery recycling requirements that are inconsistent with Federal law. We believe that additions need to be made. Battery manufacture and distribution is a classic example of interstate commerce. Lead batteries are produced and distributed on a national and regional basis. They are not manufactured for sale in a specific State. When different States impose different requirements, even seemingly innocuous differences such as product labeling obligations, significant and unnecessary costs are imposed on the battery manufacturing industry.

Second, we recommend the addition of a national \$10 deposit in lieu of the trade-in provision on automotive-type batteries in section 406. Such a provision would require retailers to collect a \$10 deposit on the sale of any replacement battery not accompanied by the return of a used lead-acid battery. The deposits would inure to the benefit of the retailer unless the customer returned a used lead battery within 30 days of the date of sale. It's been our experience that when deposit requirements are combined with the other provisions of section 406, consumers have a strong incentive to participate in the recycling program. EPA reached a similar conclusion in its lead battery regulatory negotiations in 1991.

Third, the labeling exemption for lead acid batteries in section 405 should be eliminated. We are concerned that the exemption in section 405 could be read to require the listing of lead batteries under section 404(b), even though there has been no determination they may reasonably be anticipated to present an unreasonable risk to human health or the environment.

With that, Mr. Chairman, and Members of the subcommittee, I thank you for the opportunity to appear before you today, and I'll also be pleased to answer any questions you may have.

Senator REID. Mr. Gary Shapiro?

**STATEMENT OF GARY SHAPIRO, GROUP VICE PRESIDENT,
ELECTRONIC INDUSTRIES ASSOCIATION, WASHINGTON, D.C.**

Mr. SHAPIRO. Good morning, Mr. Chairman. I am Gary Shapiro, Group Vice President of the Electronic Industries Association. I'm appearing today on behalf of my association and the Ad Hoc Elec-

tronics Coalition on Lead. This coalition includes both trade associations and individual companies which use lead in a variety of electronics, electrical, and high technology applications. Besides EIA, other trade associations in the Coalition include the American Electronics Association and the American Amusement Machine Association. Together, these trade associations represent over 3,000 electronics and electrical equipment manufacturers.

In the brief time that I have today for oral remarks, I'd like to focus on the highlights of the Coalition's position on S. 729. First, as a general matter, we support the goals of S. 729 and endorse the structure and intent of the legislation. The electronics industry recognizes that certain types of lead uses can pose unacceptable public health concerns. In particular, we share the Senate's deep concern for controlling those uses of lead that present the danger of direct human exposure to unhealthy concentrations of lead.

Although we recognize the need to regulate certain high exposure uses of lead, the electronics industry has been very concerned that any legislative initiative on this issue must not restrict the availability of lead for use in the electronics and electrical industry. Lead has unique electrical properties that make it a critically important material in a wide variety of electronics and electrical applications. At the same time that lead serves as an essential material in our industry, these vitally important uses of lead present little or no exposure concerns.

Consumers and other individuals who use electronics products, for example, are not exposed to lead from our products. Likewise, the presence of leaded glass in computer or TV monitors does not pose a risk, nor does the use of lead solders as electrical connectors in printed circuit boards. Worker exposure to lead also is not an issue for our industry, because workplace exposure levels are already limited and controlled by OSHA.

Because lead plays such a key role in the electronics and electrical industry, we have been actively involved in the legislative debate on the lead bill over the last two years. Indeed, the Coalition actively opposed previous lead legislative proposals, which treated all lead uses as though they posed public health risks, which subjected new uses of leads to a pre-manufacture review at the EPA, and which prescribed that virtually all products containing lead be accompanied by a warning label, regardless of the exposure potential to lead in the product.

These earlier legislative initiatives posed a serious threat to the continued availability and use of lead in our industry despite the low risks associated with our lead use. They also threatened to disrupt innovation in our rapidly changing industry by subjecting our new products to pre-manufacture review, again, without any risk-related justification. The prospect of delaying the introduction of new lead-containing products in our highly competitive industry was simply unacceptable.

Because of our interest in playing a constructive role in this important issue, however, we continued to work closely with Congress, industry, EPA, and environmental groups over the past two years to help fashion a legislative package which addresses the very real public health concerns associated with direct exposure to high levels of lead, without unjustifiably regulating lower-risk lead

uses. That process led to an agreement with the Environmental Defense Fund to develop a new regulatory approach that focuses solely on high-risk high-exposure uses of lead, to remove premanufacture review of any new products, but also to provide notice and labeling for certain higher-risk lead uses. The agreement was embodied in the legislation that was reported out of the House Energy and Commerce Committee last year.

We have continued to work on these issues with you, Mr. Chairman, and your staff, and we are pleased that S. 729 has incorporated many of the understandings that we reached with the Environmental Defense Fund. While the written statement that I'm leaving with you today expresses some concerns about the manner in which EPA will implement this approach and identifies a few ambiguities that we would like to clarify through statutory language changes and through legislative history, the Ad Hoc Electronics Coalition supports the thrust of this legislation and expresses its appreciation for the opportunity that we have had to work with you on it.

In particular, the Coalition addresses two concerns in the written testimony. The first is in regard to section 403(d), which proposes a ban on certain lead solder "commonly used in plumbing systems" and restricts the availability of other lead solders that might be misused in plumbing applications. The Coalition is concerned that this ban might be interpreted in an overbroad manner that takes dual-use solders used in electronics and electrical applications off the market. Also, the proposed prohibition on the sale or display of non-plumbing solders might be misinterpreted in a manner that restricts access to non-plumbing solders used in electronics manufacturing operations. The Coalition is confident that these unintended results can be corrected by clarifying the language of proposed section 403(d) and by providing an additional explanation in legislative history.

Second, on section 404, the Coalition recommends that the committee should clearly state its intent that only lead uses that pose documented actual risks based on normal use patterns and not on speculative worst-case scenarios be singled out for special attention. We hope to avoid an overbroad interpretation of language that does not sweep into the regulatory net those lead uses that pose insignificant exposure risks.

I appreciate your invitation that I testify today on this important topic and your willingness to work with the electronics industry on this issue, and I'd be happy to answer any questions that you might have.

Senator REID. Mr. Bill Wilson?

**STATEMENT OF BILL WILSON, CHIEF EXECUTIVE OFFICER,
PRADCO, FT. SMITH, ARKANSAS, ON BEHALF OF THE AMERICAN
FISHING TACKLE MANUFACTURERS ASSOCIATION**

Mr. WILSON. Thank you, Senator. Mr. Chairman, I'm here today representing PRADCO of Ft. Smith, Arkansas, and the other member companies of the American Fishing Tackle Manufacturers Association. PRADCO is the United States' largest manufacturer of recreational fishing lures and, by some industry sources, possibly

the world's largest. Regrettably, we are here today to express our opposition to the provisions of S. 729 that affect fishing tackle. These provisions would ban the sale of all fishing weights, jigs, and lures containing lead within two years of enactment. In our view, the provisions are unnecessary and would result in the loss of thousands of jobs.

Mr. Chairman, I'd like to address three specific issues today: first, I want to tell you why the tackle industry is opposed to the bill; second, I want to update the subcommittee on what the tackle industry has learned since the last time we testified here; and, third, I want to review the Environmental Protection Agency's recent action on lead sinkers.

There are 60 million anglers in this country who generate nearly \$30 billion in economic activity annually pursuing their sport. After swimming and walking, fishing is America's most popular outdoor activity. Most tackle manufacturers are small family owned enterprises that serve local and regional markets. Unfortunately, it is these companies that would be put out of business if this bill passes in its current form.

Many manufacturers use lead in varying degrees to produce fishing tackle products, particularly sinkers and lures. Unfortunately, there is no simple answer in the search for a substitute. Let me give you an example of what I mean. Lead is a very dense substance, weighing 707 pounds per cubic foot, while substitutes such as zinc and cast iron weigh 440 and 450 pounds, respectively.

Senator REID. Give me those figures again, please.

Mr. WILSON. Lead weighs 707 pounds per cubic foot; zinc, 440 pounds per cubic foot; and cast iron, 450 pounds per cubic foot. To acquire the desired weight to provide proper ballast for our fishing lure, ballast pellets made from substitute materials would have to be nearly twice the current size. This change would require most lure manufacturers to retool the shape and the size of their lure bodies. Retooling for injection molding would cost from \$5,000 to \$30,000 per mold, and many companies have several dozen of these molds. For an industry historically burdened with low profit margins, the capital simply isn't available to make these changes, so many small firms would go out of business.

Another important point to consider is that this bill would shut down manufacturers who currently are regulated and monitored under OSHA and by EPA and, in turn, would encourage basement and garage production of lead weights and other lead tackle products. The fact of the matter is that this bill would not eliminate lead fishing tackle. It will simply shift the production of these products to unregulated sources where the public health threat would be greater.

Mr. Chairman, AFTMA appeared before this subcommittee three years ago opposing similar legislation. At that time, the Association's opposition was based on two primary factors: first, we were unaware of any documented public health problems associated with the use of lead fishing tackle; second, there were no clear non-toxic substitutes for lead in the fishing tackle. Since that time, AFTMA and the industry at large has invested quite a bit of effort in examining the impact of lead on the environment and in searching for alternatives to lead for use in fishing tackle.

Since 1975 five separate studies have investigated a total of 561 common loon deaths in the United States. Lead poisoning from the ingestion of sinkers has been positively linked to the death of around 50 common loons. A single study in 1986 examined 72 trumpeter swans which had been collected over the preceding nine years. Lead poisoning from the ingestion of sinkers was linked to four of these birds. In 1992 the Fish and Wildlife Service reported that an immature Mississippi sand hill crane may have died from ingestion of a lead sinker. Other than these impacts to waterfowl, we have been unable to identify any other environmental impacts associated with the loss of lead fishing sinkers.

Finally, Mr. Chairman, in March of this year, the AFTMA board of directors adopted a motion stating that AFTMA should take a proactive rather than a reactive position in facilitating the understanding of the impact that lead fishing sinkers may have on the health of waterfowl. Further, once these risks are understood, AFTMA is committed to removing these risks from the environment.

Toward this end, earlier this year AFTMA cooperated with EPA during their regulatory investigation on the impact of lead fishing sinkers. More recently, we understand that EPA has primarily determined that certain lead sinkers present an unreasonable risk of injury to waterfowl and that rulemaking under the Toxic Substance Control Act could ban the manufacture, processing, and distribution of these sinkers.

Mr. Chairman, the fishing tackle industry is an environmentally conscious industry. However, the combination of Congress' efforts to ban lead fishing sinkers and lures, coupled with EPA's investigation of lead sinkers and the Environmental Defense Fund's press releases, have created a great deal of concern and confusion in the industry. Every day I talk to manufacturers, wholesalers, and retailers and, for that matter, anglers who want to know what to expect. Honestly, I cannot tell them.

In summary, Mr. Chairman, AFTMA is opposed to the provisions in S. 729 that address fishing tackle. We believe that in light of the scientific information presented in this testimony and the actions proposed by EPA, the provisions are unnecessary. Clearly, our industry has a lot at stake with the proposed legislation, and we sincerely thank you for the opportunity to have a voice in the process.

Senator REID. Thank you, Mr. Wilson.

The final witness today will be Mr. James Boldt.

STATEMENT OF JAMES E. BOLDT, VICE PRESIDENT, WAYNE PIGMENT CORPORATION, MILWAUKEE, WISCONSIN, ON BEHALF OF THE COLOR PIGMENTS MANUFACTURERS ASSOCIATION

Mr. BOLDT. Thank you, Mr. Chairman. Mr. Chairman, I am Jim Boldt, Vice President of Wayne Pigment Corporation and, more importantly, one of the general partners of this small and, might I add, struggling Wisconsin pigment manufacturing company. I am here today as a representative of not only my company, but also of the Lead Chromate Committee of the Color Pigments Manufacturing Association.

The CPMA, as it is known, is an industry trade group which represents approximately 95 percent of the companies providing color pigments in the United States, Canada, and Mexico today. The Lead Chromate Committee represents the views of the CPMA with respect to issues directly involving the production and sale of lead chromate pigments.

With the Chairman's permission, I request that our statement be made a part of the record and a summarized statement given.

Senator REID. Without objection, all of your prepared statements will appear in the record.

Mr. WILSON. Thank you, sir. I would first like to begin by responding to the questions raised in the letter received from Senators Reid and Smith notifying the CPMA of the opportunity to appear before you today. The first question is, is lead exposure a continuing problem? The CPMA recognizes that exposure to bioavailable forms of lead is a continuing problem. I would point out, however, that lead chromate pigments are not used or intended for use in a manner which creates an exposure to the general population or children, nor do these pigments readily yield lead. They are not bioavailable.

Question two: Are lead chromates and the pigments that are used in the manufacture of these chromates different than lead that is used in other paints? Lead chromate pigments and commercial paints which utilize these pigments are inherently much different than the other types of lead pigments in paints, many of which have been discussed today. There are vast differences in the hazards posed by the lead oxide-based paints used on bridges or white lead paints used years ago in housing and the lead chromates which are yellow pigments. I will discuss this issue in greater detail momentarily.

Question three: Do substitutes for lead in products that use lead chromates currently exist? There is no substitute for lead in lead chromate pigment products. It is the presence of lead in the pigment which imparts the favorable properties of a lead chromate pigment, including color, hiding, and economy. While alternative products have been suggested, none can provide all these properties. They are products with names often 10 to 15 letters long, whose toxicity and environmental impact remains a mystery, but because they are called "organic" pigments, they are assumed to be safe. As a non-chemist, Mr. Chairman, these products scare me. They should be studied fully before any outright ban of lead chromates should be considered.

Question four: With regard to the bill's provisions requiring notification of new lead uses, the CPMA does not take a position with respect to the provision in the bill involving notification of new lead uses.

Question five: Is the standard set forth in section 103 as noted the appropriate standard that should be used in determining whether substitutes exist for lead chromate pigments? The CPMA believes that lead chromate pigment substitutes should be defined with the same standard used for other lead paints exempted in the bill. That standard, paragraph 103 as noted, is based on the solubility of lead in the formulation of the final cured paint product. A level of less than 60 milligrams per liter by the ANSI D-66.1 test is

specified. Since many original equipment paints, primers, and service paints utilize lead chromate pigments, consolidation could make the bill more consistent.

As manufacturers of lead chromate pigments, we are very concerned about the devastating impact this bill will have on our industry, our company, and our employees. While the CPMA agrees with the goal of encouraging environmentally sound recycling, the member firms categorically disagree with the perceived need to place an outright ban on lead chromate pigments. The actual exposure to lead in the ordinary use of these pigments is too small to quantify. Lead chromate pigments do not pose a significant risk to health of the environment. They are produced safely in modern plants extensively regulated for elemental lead exposure under the OSHA lead standard and the Clean Air and Water Acts.

The legislation, if adopted as currently written, would close three lead chromate pigment plants and idle 500 workers. But even worse, it would bring about the end of another American industry. Based on this testimony and the additional facts applied to the committee, it can be concluded that the manufacture and use of lead chromate pigments does not pose a significant risk to health or the environment and will not impact lead exposure reduction in any significant way.

In closing, Mr. Chairman, this is an emotionally charged issue. We talk of children and health hazards. But we must address this issue both with our hearts and our minds. I ask you to look closely at the data supplied and apply common sense in review of this bill. If there is one rotten apple, do we discard the whole bushel? Of course not. Let us please allow the EPA to finish their review of these products unencumbered by further restrictions. If lead chromates are indeed a bad apple, let it be determined scientifically, not emotionally. Until then, I ask that we apply the usual rules of the legal system. Lead chromates should be considered innocent until proven guilty.

Thank you, Mr. Chairman.

Senator REID. Thank you very much.

Mr. Boldt, you're aware the State of Virginia has, since 1982, used a different product than lead-based paints for their bridges and stripes down the middle of the road. Are you aware of that?

Mr. BOLDT. Yes, sir.

Senator REID. The reason I mention that is we've given you 13 years to find different products. That's a long time, isn't it?

Mr. BOLDT. I believe the problem we will have with that, Mr. Chairman, is simply that it takes a great deal of time to assess the toxicity and environmental impact of some of these products. We have a very, very mature product line. The existence of lead chromates dates back well over 100 years. The formulators, toxicologists all are very familiar with the hazards and what is necessary to safely and properly utilize these products.

We again go back to what's been mentioned earlier, which is risk and reward. Where shall we put the funding that is available? As we review that, I think it's important to look at the lead chromates and realize that to outright ban lead chromates will give us very, very little of what we're really after.

Senator REID. We're not outright banning them. We're giving you 13 years to develop substitutes. In your testimony, you state that lead chromate pigments, which are only used in commercial paints, are insoluble in stomach acid, as an example. In simple terms, are you suggesting that if someone ingests a product containing lead chromates that it will not break down and enter the bloodstream?

Mr. BOLDT. There is very little indication from the scientific world of any serious impact should that happen, but the important thing to remember, sir, is that they are not used in areas where that would become a common situation. That is what we really have to deal with, is to make sure that they continue to be used strictly in areas where there will not be exposure to the general population.

Senator REID. The EDF, in their testimony, which has also been admitted to the record, contend that the greatest hazard posed by lead chromates is when they deteriorate into particulates that then enter the atmosphere. What is your retort to that?

Mr. BOLDT. Well, the thing that has to be recalled is that what we're talking about here is lead chromates, which is a very serious structured pigment. Their exposure to the general population is also enclosed in space age-type resins, which are not easily broken down. They're built that way. As these products do in fact break down eventually, and we might cite the example of roadside, they do in fact roll to the side of the road, but they are 1,000 times less soluble than naturally occurring lead.

Senator REID. Upon what do you base that?

Mr. BOLDT. That is based on actual test method.

Senator REID. In your testimony, you repeatedly suggest that lead chromates are used in industrial and commercial uses. Where are they used in industrial and commercial?

Mr. BOLDT. They can be used, obviously, in the road striping. They are used in original equipment, things that are necessary for the protection against rust. As an example, possibly some pump parts, things of that nature.

Senator REID. How is the State of Virginia handling their problems in the last 10 years? I mean, are they having more rust than other States?

Mr. BOLDT. Unfortunately, sir, I'm not really qualified to comment on that.

Senator REID. That's what you need to get up to snuff on, because that's basically what we have in this bill, that you have 13 years to find new ways to stop rust in the products that you sell; otherwise, somebody else will.

Mr. BOLDT. I believe what the State of Virginia is really doing more than anything else is eliminating the use of lead chromates in traffic marking, and I would challenge them in their assessment of whether that is a value versus dollar replacement. The one thing that lead chromates—and we duly hope that the committee and the EPA, when the time comes, will take a serious look at cost versus hazard.

Senator REID. This is something that I'm concerned about. In fact, I'm sponsoring legislation with Senator Moynihan that would take a look at the cost versus the risk involved. So this is some-

thing we're all concerned about, and we appreciate your thoughts in that regard.

Mr. MUTH, you said that the apron made of lead used by dentists could go on the new use list, but this is not true, because section 403 of our bill exempts products used for a medical purpose.

Mr. MUTH. Well, I believe our reading of the Bill is correct; but another example will make the point. Let's try a fishing weight.

Senator REID. All right.

Mr. MUTH. The point is that many common, everyday current uses of lead would be categorized as "new uses" under the bill if EPA fails to meet its statutory deadline.

Senator REID. In your testimony, you state that lead is a vital material for manufacturing a range of products from high technology, health care, and energy products, and no one would take issue with that, and that's why we've worked for several years now to satisfy the legitimate concerns of the electronics industry and others that may be affected by this legislation. How do you respond to the fact that the electronics industry and the battery community, two of the largest users of lead products, are basically supportive of the legislation being discussed here today?

Mr. MUTH. I have not heard the battery industry today say that they support the new use provisions of the bill.

Senator REID. No, I didn't hear them say that either, but my point is they do support the legislation, and I guess what you're saying is they support the legislation but maybe not the new use provisions.

Mr. MUTH. Well, sir, they'll have to speak for themselves. We, too, support portions of the bill. From the very beginning, we have supported, for example, the recycling provisions, and we have not opposed the schools and daycare provisions, and we would not oppose what we would consider to be an appropriately drawn new use provision. We are not opposed in these respects to the thrust of this bill, Senator Reid. Unfortunately, I had a very few minutes in which to speak, and I don't speak very fast, so I couldn't include all the niceties that I would have liked very much to have included in my statement. I had to get right to the point.

I think, yes, the heart of our concern is in the way in which this so-called new use provision can be used against our industry to attack primarily existing uses. After all, the concerns list is a list of existing uses, and it will be the publicity that will be associated with that process of putting existing uses on the concerns list. Understand, sir, that this bill provides for petitions to list items. I fully expect EDF to file petitions to list every single use of lead that's identified on the inventory, and the mere fact of filing the petitions, whether they are eventually granted or refused, whether they have any foundation or whether they're like the municipal solid waste claims, wholly without foundation, won't matter. What will matter is that producers using lead will be hard-pressed to continue using the product even in safe and beneficial applications.

Senator REID. How do you feel the new use provision should be handled?

Mr. MUTH. One suggestion we have made to the staff is to recast the provision so that it relates solely to consumer exposure. You know, there was a time when chemical companies first invented

tetraethyl lead. It was a new product. When the Dutch in 1830 invented the process for making white lead pigments, it was a new product. There may someday conceivably be another such new product that would be of the highly dispersive nature of those products with a likelihood of widespread direct consumer exposure. We would have no objection to a provision of law that narrowly saw to it that didn't happen.

We're not opposed in these respects to what we believe is the intent of this legislation at all. What we are concerned about is, for example, when you asked the young lady from the Alliance, "What about your concern with existing products?" the answer was, "Well, you know, eventually every existing product gets into the environment, and we don't think there should be anything new going into the environment that has lead in it." Now, what we're concerned about is that point of view being pressed in the proceedings that this bill will authorize over at EPA and the damage that can do to safe and beneficial uses of the material.

Senator REID. Thank you.

Mr. Hawkins, this bill provides for a study on small sealed consumer lead-acid batteries. What disposal practices are currently used for the small sealed consumer lead-acid batteries? Just throw them away? Is that about it?

Mr. HAWKINS. No. We actually encourage their recycling. In fact, if you watch us advertise, we advertise three or four times a year in USA Today.

Senator REID. How do you do that?

Mr. HAWKINS. Well, we actually pay the consumer \$1 to \$1.50, depending on the retailer. We've convinced—and I'm speaking for my own corporation now, if I might. We've convinced K-Mart, we've convinced Montgomery Ward, people of that ilk, major retailers in this country, to allow batteries to be brought back, and we buy them from them.

Senator REID. Is that right?

Mr. HAWKINS. Yes, sir. Our objective is to get to 100 percent in our industry, and we've done quite a good job to date.

Senator REID. Why did you drop 1 percent last year?

Mr. HAWKINS. Because the price of lead dropped so dramatically. It went from 45 to 50 cents a pound down to today on the LME it's trading at 20 cents a pound. I mean, it's incredible, and those of us with secondary smelters, other than the environmental obligation that we feel we have to our great country, would close them down in a heartbeat.

Senator REID. Because there's just no money in it?

Mr. HAWKINS. Well, we're losing our shirts, to be perfectly frank with you. Bob Muth's not saying it, but he's got the same problem in terms of the primary side. One of the reasons we want that \$10 deposit in there so that if a consumer doesn't bring his battery back, it's going to cost him \$10, is we want to make sure that we keep that loop closed and we force that battery back through the system.

Now, we're working very closely with the other people in the battery business, and I'm referring now—you mentioned the small sealed lead-acid. The ones that we haven't got our arms around yet are the nicads, the nickel cadmium, and that has all of us in the

lead industry very concerned, because we can't smelt those. We can't recycle those, because cadmium is a carcinogen, and you know the story on that type of material. We haven't found a way to run those back through our smelters yet, so when I say we're bringing back sealed lead-acid, the small ones, we're not bringing back the nickel cadmium, or nicad, batteries.

Senator REID. So what should we do about that?

Mr. HAWKINS. I can't speak to that, because it's not lead-acid.

Senator REID. You state that the bill should contain a prohibition on States imposing requirements that are inconsistent with Federal law, and I totally understand that. It makes a lot of sense. I know in Nevada with some of the original clean air legislation, Nevada always had more stringent clean air regulations than the Federal standard. Most States like to have this flexibility. Tell me why they should not have it in this area.

Mr. HAWKINS. Well, what happens is—I'll give you an example. Down in Florida we have a collection law that the State of Florida adds another tax on of \$1. It comes out of nowhere and is consistent with none of our legislation or whatever. It's just purely another \$1 the State of Florida collects. We have the same thing down in the great State of Texas, and we have the great State of Texas collecting another fee on the battery, and it doesn't go to anything like recycling or environmental or whatever. It just goes into another pot.

What we've tried to do is we've tried to say—and we've been successful in 42 of the States, to be honest with you. We've said, "This is the model recycling legislation. This is what we want to see enacted through your States. We want to make sure that our labeling is consistent," because we're shipping across State boundaries, and for us to have one label for Texas, another one for Massachusetts, another one for Michigan, it becomes impossible.

Senator REID. OK. I think that's worth looking at, and we'll take a real close look at that. That makes a lot of sense. What happens if the price of lead continues to drop?

Mr. HAWKINS. So far so good. Steady on the tiller. You're getting secondary smelters that are going out of business as we sit here today. Four have already gone bankrupt this year. But, you know, the free market enterprise being what is, a capitalistic environment, the chances are they'll be replaced.

Senator REID. But what does that do when you have to recycle a battery? It has to be taken to a smelter, does it? Tell me how that works.

Mr. HAWKINS. Right. What we do today and why we want the \$10 law—we've been very successful with our retailers today, Senator Reid, primarily because of the threat of your good selves. We go to the retailers and we force most of them to put a \$5 exchange on batteries. If you go in today, the chances are most of the time you're going to have an exchange price forced on you, because we the industry have been working on it for many years. But it's not high enough. We believe that if we can get it up to \$10, then the consumer who's paying \$30 or \$40 for the battery is going to bring the old one back regardless of what the price of lead is, and then we end up with a closed system. That's how it works.

Senator REID. I understand.

Mr. HAWKINS. Now, if the price of lead goes down much further, I can't tell you where it's going to go, but so far we've been able to hold it.

Senator REID. Mr. Shapiro, we note your testimony favoring the bill. We also note the problem with the solder, and we know that there should be some report language with the legislation so that there's no confusion later on as to what purpose solder is being used, and I think we can handle that.

Mr. SHAPIRO. I appreciate that.

Senator REID. Your testimony goes into detail about specific applications that the industry relies on lead to complete, and we think the language of the bill as currently written generally protects the uses that must continue for lead and which pose no threat to human health in applications.

If any of you have anymore input that you want to make in that regard, please feel free to do so. As I said, we're going to bring this before the full committee in the near future and hopefully have it on the Senate floor sometime this year. I appreciate all your testimony.

Mr. BOLDT. Mr. Chairman?

Senator REID. Yes, please.

Mr. BOLDT. Might I get a clarification into the record?

Senator REID. Sure.

Mr. BOLDT. Thank you, sir. With regard to the questioning of the lack of lead chromate use in the State of Virginia, it is the understanding of the CPMA that the State of Virginia has said that the State should not apply lead chromate marking paints. However, it does permit private contractors, including those contractors that line State roads, to use lead chromates. The reasoning behind this, we are told, is the State did not wish to have to deal or be burdened with the RCRA regulations for disposal of partially filled drums, and, therefore, it has not fully banned lead chromates. It is simply that the State will not use them.

Senator REID. Thank you.

I thought I was all through here, but, Mr. Wilson, I have some questions for you. Is there any information available on how many lead sinkers fall to the bottom of the rivers, lakes, and streams each year?

Mr. WILSON. Mr. Chairman, I would not have access to that type of information.

Senator REID. How would we find it?

Mr. WILSON. We're such a fractionalized industry consisting of such a wide variety of manufacturers—

Senator REID. Why are so many manufacturers small manufacturers? You indicate that there's—

Mr. WILSON. I think it's more of a labor of love, Senator. Many people who have been caught up in the American heritage of fishing—and, you know, the United States represents the largest sport fishing enterprise in the world, representing 60 percent of all sport fishing dollars being generated here. Many times people who enjoy the sport look for a way to make a living doing what they enjoy doing, which is fishing. We have approximately 500 to 600 members in the American Fishing Tackle Manufacturers Association,

and of that group, 350 of those approximately generate less than \$250,000 in sales.

Senator REID. Total or individually?

Mr. WILSON. Individual companies. The company may be one person or a family or what have you.

Senator REID. Mr. Wilson, we have 100 percent of the lead sinker manufacturers in the United States. How many of them are small as you describe? Fifty percent? Twenty percent?

Mr. WILSON. I think the manufacturers that are recognized, like Water Gremlin and Bullet Weight and some of these people, represent the largest portion of the more recognized participants. However, there is also a great deal that is imported into this country in weights of the type you describe, and then there are garage operators, or it may even be an individual tackle shop who cast some of these particular products themselves in their own place of business.

Senator REID. Water Gremlin wrote to us last week, they presented testimony, as I've indicated, two or three years ago, they say:

A copy of our position at this time is attached to this letter. Our position from that date until today has not changed. We support the effort to ban lead as a material because of its adverse effect on the environment, as documented by so many studies. Banning the use of lead and not just the manufacture and importation would seem to us to be the most logical approach and more enforceable. We have invested a great deal of time and money over the past three years researching alternate materials. Sample sinkers have been shown to the Environmental Protection Agency. The materials we have selected are tin and a composite plastic iron that should be environmentally friendly. It would require approximately six months for us to build or modify tooling and packaging equipment.

This is in keeping with what you've said. That, of course, is expensive. "The retail price of sinkers, however, will increase approximately three times the current value."

My question is, you've indicated that it would cost eight to 10 times; they say three times.

Mr. WILSON. What we are seeing is we're seeing not only fish weights, but also jigs and lures, and when I look at that, we are looking at kind of a broad-brush issue here. These things are not—the only thing that's common is they do possess some lead in them, but in the case of Water Gremlin, I think they're addressing that purely and simply on the basis of weights and, as a result, the difference in density.

Obviously, the relationship of lead to some of the other substitute materials are greatly out of bounds. You know, the multiple there could be three or four or five times greater, and then the processing technique could be extended as a result of cooling time and so on. If you look at one being twice as dense as the other, to have a quarter ounce of weight would require a volume of double the normal size, and I think that's one of the problems that we face in both weight as a sinker and as far as the inclusion of ballast in a fishing lure, for example, or a jig. The size of it would be incrementally increased.

Senator REID. By the way, we understand you're having your national convention in Las Vegas next month, and we wish you well.

Mr. WILSON. Correct. I was going to invite you to be present.

[Laughter.]

Senator REID. That's like inviting me to the Indian Gaming Convention, at which I did speak. I surprised them. I accepted that invitation.

Mr. HAWKINS. Senator Reid, can I make one comment?

Senator REID. Yes.

Mr. HAWKINS. Just for the record, we use 2.6 billion pounds—billion with a "B," not the "M"—2.6 billion pounds of lead a year. Eighty percent of that's used in the battery industry. We've been working for 50 years on finding a substitute for lead in batteries. We've looked at lithium, metal hydrides, sodium sulfur. I mean, the list is endless, and we spend tens of millions of dollars every year trying to find something that will get us out of this lead which we all don't want to be in because of the regulations involved in it, and so far in 50 years we have been unsuccessful. In fact, we can't bring the electric vehicles through the loop with anything else but lead-acid batteries. I mean, that's where we're at with all the millions—

Senator REID. I understand that. I serve on another committee where we've done some work trying to find a way to lighten batteries, because as you know, with automobiles that's the big problem. They're so heavy.

Mr. HAWKINS. Absolutely.

Senator REID. And it's not only the United States. I have been to Israel, and they have a company there by the name of Luz, who's done great work in solar collecting, and solar collecting is great in the daytime, but we need some way of storing that energy, and they have worked along with us, and we've had consortiums. It is a very difficult problem, and someday there will be a breakthrough, but I don't know when that will be. It could be tomorrow or 100 years from now.

So I think that testimony should be spread across the record, that it's easier said than done to find substitutes for these batteries and perhaps with some of the other uses of lead, and I understand that.

Mr. HAWKINS. Well, that's the issue I was trying to make, Senator, because we're looking at 2.6 billion pounds of lead. Lead sinkers are using two million pounds, which is .0013 percent of the lead used in America. I mean, that number gets lost totally in rounding in terms of the magnitude of the problem that we've got. When you consider that between paint and gasoline that over 60 percent of the lead was used in those products in the old days, that's really what we're paying for in our country today, the fact that those products were dispersed into the environment. That's what we've got to clean up.

Senator REID. That's why it's been helpful to the committee that your industry has been cooperative with us, because as you said, 80 percent of the lead today is used in batteries, lead-acid batteries.

Senator Smith has significant interest in this panel. As you know, he's tied up on the floor. He'll have some written questions to submit to all or some of you, and we would appreciate your getting back to him and to the committee as soon as possible.

This committee stands in recess.

[Whereupon, at 11:47 a.m., the subcommittee adjourned, to reconvene at the call of the Chair.]

[Statements submitted for the record and the bill, S. 729, follow:]

TESTIMONY BY BERNARD O'ROURKE ON BEHALF OF THE NATIONAL
SCHOOL BOARDS ASSOCIATION

I. INTRODUCTION

I am Bernard O'Rourke, an elected school board member of the Essex Fells, New Jersey School District representing the National School Boards Association (NSBA). The National School Boards Association speaks on behalf of public education nationwide and represents 97,000 school board members like myself, who endeavor daily to provide an excellent public education to every child in the country. School board members are the elected and appointed officials responsible for making the hundreds of difficult choices that balance educational programs against the fiscal realities which they and local voters face. As you know, these choices have become more difficult in the last several years.

School board members run for office to benefit the education of school children. The safety of their own children and the children in their community is a very real concern for these unpaid civic leaders. They do not want anything to harm the health of the children they work so hard to serve. The National School Boards Association supports those school board members and endorses the mission of S. 729.

One of the school districts' most difficult tasks is to balance the many competing needs of children. These competing needs include the innovations required to educate children for the 21st century, adequate salaries to attract and keep good teachers, and special services for children, such as food and health services, which are precursors to student learning. All of us share the goal of making each school into the perfect educational setting—with all the books, computers, and teachers needed; with aesthetically pleasing buildings, in excellent repair, and devoid of every potential environmental threat. But this ideal is not the state of America's public education. Instead, each school district must create a system to assign priorities with insufficient and finite funds. Consequently school board members must be precise in distinguishing among imminent dangers—guns, hunger, abuse—and potential risks. Priorities are different for each school district.

NSBA's effort last year during the House consideration of a bill to mandate lead testing in schools resulted in an enormous step toward appropriately addressing the problem of childhood lead poisoning. We applaud the balance struck in S. 729 with the two-tier lead testing requirement: the stringent testing in classrooms used by kindergartners and younger children and the less stringent testing in classrooms used by older children.

We also applaud the use of the state, instead of the local school board, to conduct the actual testing. There are competent professionals in every state who are familiar with environmental risk assessment and management. School board members and school personnel should not become engineers, environmental scientists, industrial hygienists, and risk managers. This is an important lesson learned from the asbestos experience. School board members should not be diverted from managing the educational business of schools.

However, we think S. 729 has its limitations. NSBA makes the following recommendations: (1) priorities should be set for testing and abatement locales based on risk; (2) the state should conduct any lead abatement; (3) necessary federal funding must be available for testing and abatement; (4) steps should be taken to ensure that lead testing and abatement does not affect the state's maintenance of education funding; and (5) school districts should not be liable, and liability standards should be clarified.

II. ARE SCHOOLS THE FIRST PRIORITY?

In our common effort to ensure that our children are safe from lead poisoning, we must assess those areas where abatement is necessary and will most effectively reduce childhood exposure. In many cases, schools are unlikely to be the highest priority. During children's school age years, they spend *less than ten percent* of their time in school.

This point was underscored in a letter written (attached) to the National School Boards Association from the doctor who authored the CDC statement, "*Preventing Lead Poisoning in Young Children*." Dr. Sue Binder, Chief of the Lead Poisoning Prevention Branch, wrote, "As you know, we at the Centers for Disease Control (CDC) emphasize that we must set priorities for identifying and abating those lead hazards that are likely to result in lead exposure in children. We are more con-

cerned about day-care centers than schools. . . ." The letter continues, "The CDC statement . . . emphasizes identification and case management of children less than 72 months old [six years]; particularly those less than 36 months old [three years] because of the fact that these young children are most likely to have high blood lead levels. For these children, schools are not likely to be a major source of exposure. . . ."

Experts in the field clearly do not make the case that schools should be a priority for lead testing or abatement. For example, in neither of the two major publications on this subject are schools even mentioned as an area of concern or necessary activity; the publications are the Center for Disease Control's, *"Preventing Lead Poisoning in Young Children"* and the Environmental Defense Fund's Report and Proposal for Legislative Action titled, *"Legacy of Lead: America's Continuing Epidemic of Childhood Lead Poisoning."*

If the Committee determines that schools are a high priority, NSBA has many recommendations. Some of the most significant follow.

III. STATE SHOULD CONDUCT LEAD ABATEMENT

Although abatement—removal, encapsulation, or management—is not required in this bill, nevertheless the notification process will create intense pressure to perform abatement. It is disingenuous to suggest that parents can be told that there is lead in their child's school without demanding its abatement.

Lead abatement is extremely costly and requires an understanding of both the environmental hazard and the available abatement procedures. The trained professional in the state environmental department would be most effective in handling the abatement process with a strong role for the school board. With the state's expert scientific advice, the state department and the school board could develop a plan to ensure that the timing is appropriate for the school calendar, communication with the parents is complete, and accurate and timely information is available for the media and other interested parties.

IV. FUNDING OF LEAD TESTING AND ABATEMENT

Congress must make adequate funds available to those state environment departments to conduct all needed lead testing and abatement. The proposed authorization for lead testing has been reduced from a total of \$150 million to \$90 million during the last year. The original House bill, H.R. 2840, contained a \$30 million annual authorization for each of five years. A later House version, H.R. 5730, reduced the same authorization to four years. And now, S. 729 reduces the \$30 million per year authorization to three years.

Conversely, the cost estimates for lead testing and abatement have not been reduced. The Congressional Budget Office cost estimate for the inspection of lead in the paint and soil in school buildings and grounds is \$1,000 to test paint and \$3,600 to test soil. Since there are more than 70,000 schools with elementary age children, the total cost is more than *\$320 million*.

In its 1990 report to Congress, the U.S. Department of Housing and Urban Development discussed the abatement of lead-based paint. Their estimate to remove lead paint from small public housing apartments with intact lead paint and high levels of dust ranged from \$8,900 to \$11,900. This figure does not reflect the cost of abating lead in exterior soils.

The city of Chicago has been proactive in lead paint removal. Chicago was one of the first school districts in the nation to embark on removal and encapsulation. Naturally there is a wide variation in cost depending upon the work required, but in a single school in Chicago, in which abatement is only two-thirds completed, the cost thus far is \$400,000! Even if ten percent of the schools covered in S. 729 needed that level of abatement, the cost to taxpayers would be \$3 billion dollars. And that assumes that the other 90 percent of schools needed little or no abatement.

NSBA recommends that there be a separate authorization for day-care facilities, so that schools and day-care facilities are not pitted against each other for funding. Then the state can use the school funding to set priorities among the schools.

S. 729 should provide full funding for lead testing. Further, a tripartite funding system—where the federal government, the state government, and the local school district all commit themselves to a financial partnership to abate the lead paint—should be established. Otherwise, lead abatement, because it is expressly mandated, could become a higher priority in the school district than the education of children. Lead testing and abatement would receive all the funding they require, while education programs must make due with what remains.

V. MAINTENANCE OF EFFORT IN EDUCATION FUNDING

It is very important to have the states conduct all of the lead testing and all of the abatement that is deemed necessary. Nevertheless, superintendents and school board members have voiced concern that the *funding* would go to the state, but the actual burden of the *mandate* would be passed on to the school district. There is also a fear that funding not provided to the states by the federal government for the testing and abatement would come from the depleted coffers of the states' funding for education.

The National School Boards Association proposes a federal grant to states for lead testing and abatement. A condition for receiving the grant would be a maintenance of effort in funding for education, thereby ensuring that the current education funding priority would not be lowered. This concept mirrors S. 729's own maintenance of state efforts on lead inspections as a requirements for federal funds.

VI. SCHOOL DISTRICT CIVIL LIABILITY

If schools do not conduct the testing, they should not be responsible for the civil penalties that flow from a violation. A violation of S. 729 would subject a school to federal civil penalties of up to \$5,000 per violation. The language of the bill suggests there may be a new violation each day that each school does not comply with every requirement of the section. Such language could have disastrous results. For example, if there is no infrastructure in place to handle lead inspections immediately after a renovation, that is a violation. If a hurricane or other natural disaster strikes, and it's not possible to test for lead in the buildings that are used as schools, that is a \$5,000 per day violation. In my school district, Essex Fells, New Jersey, that alone could cost millions of dollars daily. A violation could be the failure to give to a new child at the school the lead-testing report. A violation could be the failure to notice that such a report had been taken from the bulletin board in the teacher's lounge and not replaced for a month; thereby creating a potential \$150,000 in school district liability.

Is this how schools should spend taxpayer resources for education? NSBA suggests a showing of bad faith be required for this violation to be imposed and that the daily penalty be reduced substantially.

Most important, the penalty should be against the state, not the school district. The school district cannot be held liable for failing to conduct an inspection it is not responsible for conducting.

VII. RECOMMENDATIONS

The National School Boards Association urges the Environment and Public Works Committee to address these concerns:

- A. Priorities should be set for testing and abatement sites based on risk, especially since children spend less than ten percent of their school age years in school.
- B. Lead testing and abatement in the schools should be conducted by the state environmental agency.
- C. Sufficient federal funds for testing and abatement in all schools must be included in the bill, and separate funding should be provided for schools and day-care facilities.
- D. States should be required to maintain their current educational funding levels as a condition for receiving a federal grant for testing and abatement.
- E. School districts should not be held liable for civil penalties if they do not have the responsibility for conducting the testing.

The National School Boards Association looks forward to working with Senator Reid and the Subcommittee on Toxic Substances, Research and Development of the Environment and Public Works Committee in further refining this legislation.

Thank you for the opportunity to share our views.

ATTACHMENT

March 19, 1992

Laurie A. Westley
Chief Legislative Counsel
National School Boards Association
1680 Duke Street
Alexandria, VA 22314

Dear Ms. Westley:

Thank you for your letter of March 11 about evaluation of potential lead hazards in schools and day care centers. The following comments reflect my opinion about universal lead testing of schools; they are not comments on H.R. 2840.

As you know, we at the Centers for Disease Control (CDC) emphasize that we must set priorities for identifying and abating those lead hazards that are likely to result in lead exposure in children. We are more concerned about day care centers than schools for several reasons. First, children in day care centers are generally younger than those in schools. Thus, they are more likely to have greater hand-to-mouth activity and they may be more vulnerable to the effects of lead. Secondly, most time at school is spent in structured activities, usually performed while sitting at a desk. Children in day care are more likely to be on the floor and in parts of a room like under windows, where lead hazards are more likely to occur.

The CDC statement, *Preventing Lead Poisoning in Young Children*, emphasizes identification and case management of children less than 72 months old; particularly, those less than 36 months old because of the fact that these young children are most likely to have high blood lead levels. For these children, schools are not likely to be a major source of exposure, unless the schools are also being used for day care.

If you have further questions, please feel free to contact me.

Sincerely yours,

Sue Binder, M.D.
Chief
Lead Poisoning Prevention Branch
Division of Environmental Hazards
and Health Effects
National Center for Environmental
Health and Injury Control

STATEMENT OF MARLENE BLUM, THE NATIONAL PARENT-TEACHER
ASSOCIATION AND THE NATIONAL EDUCATION ASSOCIATION

Good Morning, Senator Reid, and other members of the Subcommittee. My name is Marlene Blum. I am past president of the Fairfax County Council of PTAs in Fairfax, Virginia, an active member of the National PTA, a mother of two sons, and a citizen concerned about the health and well-being of all the children in our nation's schools and day care centers.

I am here today representing the nearly seven million parents, teachers, students and child advocates in the National PTA, and the two million members of the National Education Association. Our organizations have testified on the hazards of lead in the past, and we will continue our efforts at all levels of government to secure policies that eliminate environmental hazards from schools.

The National Education Association represents education employees in public elementary, secondary, and vocational schools and institutions of postsecondary education. NEA's members include teachers, education support personnel, higher education faculty, college students, and retired school employees.

The National PTA's members are in all fifty states, the District of Columbia, Europe and the Pacific regions where American parents send their children to Department of Defense Dependents Schools. PTA was founded on the premise of parental involvement, and strives, among its objectives, to secure adequate laws for the care and protection of children and youth. Both organizations believe that schools should provide safe and healthy environments for the children they serve.

Today we have been asked to present our view on S. 729, "The Lead Exposure Reduction Act of 1993", and to address several specific questions pertaining to the school and day care center lead testing provisions of the bill. My oral statement will be brief, and focus on this information. I am submitting a longer statement, for the

record, that gives more detail, and also includes an appendix with background material on the hazards of lead and its effects on children.

In beginning, I must repeat one indisputable fact: The EPA, the Centers for Disease Control, the Surgeon General, and other federal environmental and public health officials all agree that lead poisoning is the number one environmental threat facing children in America today.

In the past few years, in response to this fact:

- the federal government has launched an interagency, five-year strategic plan to eliminate childhood lead poisoning;
- the CDC has revised its recommendations on screening children for lead poisoning, including lowering the threshold for the blood lead level used to define lead poisoning, from 25 to 10 micrograms per deciliter;
- Congress has expanded Medicaid coverage, for which one-third of America's children are eligible, to require blood lead screenings in young children;
- HUD is involved in a number of efforts to eradicate lead-paint hazards from federally owned, assisted and insured housing;
- the American Academy of Pediatrics issued a policy statement, which serves as a practice guideline for pediatricians across the country, recommending that all children from six months of age to six years, be screened for lead poisoning; and
- last year, Congress enacted legislation that will make great progress toward preventing childhood lead poisoning across the nation. Known as Title X, these provisions will create—with federal agencies working together with the states—the infrastructure needed to address the problem. The heightened federal leadership will provide increased resources for abatement, specific timetables for action, and clear standards for licensing contractors, protecting workers, certifying laboratories, and accrediting training programs. These efforts will assure a competent, properly trained pool of lead inspection and abatement workers to complete the inspections of schools and day care centers.

Yet, despite these efforts, childhood lead poisoning continues to affect millions of children in schools and day care centers. There was a positive attempt toward addressing the problem in schools in 1988, when the Lead Contamination Control Act (LCCA) was enacted. Unfortunately, the drinking water testing provisions in the LCCA were voluntary, and states did not comply with the law.

Too much time has passed without action since then, and we must now move on. The next step is to enact more comprehensive legislation requiring schools to test for lead hazards in their drinking water, paint and soil. Simply testing for lead hazards is not a costly operation. If schools do not find hazards, they will not need to take further action.

If they do not test—simply because they fear they cannot afford abatement—they are then knowingly continuing to expose children to a serious environmental hazard. Besides, abatement does not—as many people incorrectly believe—mean removal of all lead-based paint. There are many strategies that can be used to reduce the hazards that need not be costly.

Lead poisoning is a problem that has been around for centuries. It will not go away overnight, nor will it disappear by itself. Action must be taken to eliminate the hazards. To eradicate the problem in schools, the federal government must work in partnership with state agencies—be it the Department of Health, Education or the Environment—and with local school districts and communities. All affected parties can work cooperatively to assure that public school buildings are safe from environmental hazards.

We believe the federal government must take action to set the policy that schools and day care centers be tested, first and foremost, to protect children. In addition to setting good public policy by reducing exposure to lead, testing and abatement efforts are cost effective. By preventing further exposure, we save money that would later be spent for health care and special education.

When we were asked to testify, we were asked to speak about the specific provisions of S. 729 and to respond to several questions about the school and day care center testing section. Following are our responses and recommendations about the Senate bill.

1. Is lead exposure a continuing problem for humans and for the environment?

Absolutely yes. Just about everyone agrees, even those who might oppose mandatory testing, that lead exposure is an enormous environmental and public health problem. The addendum to our written statement discusses this aspect of the issue in more detail.

2. Are the school and day care testing provisions of this legislation important in terms of addressing the risk to children in our nation's schools and day care centers?

Yes, the school and day care testing provisions are important to address the overall risk to children. The school and day care center testing provisions are very targeted. They apply only to buildings built before 1980 and to rooms in the schools used by the youngest children. Further, states are directed to give priority for testing to areas of the state, according to their order of severity of the suspected lead hazards.

Following are our specific comments regarding S. 729:

- *The requirement to test, whether it be carried out by the state or the school district, must not be tied to the appropriation of federal funds.* Children are compelled to attend school, and they spend a large part of their day in school buildings (particularly if they attend before- and after-school programs). Parents have the right to assume the buildings their children go to will be safe from environmental hazards. We cannot wait until \$90 million is appropriated, or four to five years after that, to assure that hazards are identified. We cannot continue to ignore the consequences caused by further delay.
- *S. 729 should address the issue of lead in drinking water in schools and day care centers.* We already know that lead in school drinking water is a hazard. Congress recognized this as well when it enacted the Lead Contamination Control Act in 1988. Unfortunately, the LCCA was not effective. States did not do what was expected of them, the water cooler inspection program was too limited and ineffective, and as a result, the known hazard of lead in drinking water in schools and day care centers is still a problem. We believe, since Congress acknowledged the problem five years ago, and EPA has confirmed the hazard still exists, that this bill should address the issue again.
- *The bill does not mention the risks of lead in soil.* CDC recognizes lead contaminated soil as a likely, important source of lead poisoning for a large number of children. However, they acknowledge that adequate information is not yet available to make recommendations for a national soil abatement strategy. Last year, the House bill included soil in its school and day care center testing program, which we strongly support. We would support, as a compromise position, language directing EPA to develop sample soil testing procedures and to assess the extent of lead-contamination in soil around school and day care center buildings, schoolyards and playgrounds.
- *Parents and teachers ought to be notified that a school or day care center has tested for lead and abated as needed.* The bill exempts such schools and day care centers from the notification provisions, but we would think they would want to inform parents and staff that they have inspected their building and done what was necessary to assure there is no exposure hazard.
- *The section on risk disclosure must specify timelines for any abatement activities that need to be undertaken.* Parents have the right to know how long schools and day care centers will wait before the problem is addressed.
- *The provisions related to renovation should be broadened.* We are pleased this section is in the bill, but all school rooms, including those in secondary schools, should be included in because of the potential risk involved in renovating activities. Without testing, schools could inadvertently create even more hazardous conditions for children and staff in completing such projects.
- *The authorizations should be increased and expanded.* Last year we supported legislation authorizing \$30 million per year for each of four years for testing and abatement of lead-based paint hazards, and an additional \$30 million per year over four years for drinking water testing and abatement. We recommend that an authorization be added for school and day care center drinking water testing and abatement. We also recommend that funds be awarded for paint abatement projects. As with testing, the abatement funds could be awarded to schools and day care centers based on the financial need of the applicant and the severity of the hazard.
- *The testing approach we support gives schools and day care centers maximum flexibility in addressing any problems they identify.* There is no mandate to abate, just to provide good information. Many schools will not have lead hazards, but they will not know if they have a problem unless they test. If a school finds lead, the administrators can go to the parents, school staff, and the rest of the school community to discuss how best to address the situation at the local level.

3. Do the National PTA and NEA have statistics on how many public schools there are in this country that may have lead exposure problems, and, if so, would the PTA provide that information to the Subcommittee?

We do not have definite numbers about how many public schools in this country have actual lead exposure problems, from paint, soil or drinking water. We do, however, know the problem is national in scope and requires strong federal action to address it. DHHS's strategic plan to eliminate childhood lead poisoning called for expanded prevention activities and a reduction in sources of lead exposure in addition to lead-based paint. The CDC statement on preventing lead poisoning suggests that a comprehensive environmental lead testing program would look for other lead sources, "including drinking water in schools and residential buildings, soil in playgrounds and schoolyards, street dust, and lead-based paint in nonresidential buildings such as day care centers and schools."

The NEA and PTA are not alone in calling for inspections in schools and day care centers. The American Federation of Teachers, the Alliance to End Childhood Lead Poisoning, the American Academy of Pediatrics, the NAACP Legal Defense and Educational Fund, the Environmental Defense Fund, and other health, environmental and labor organizations all support a requirement that schools and day care centers test for lead hazards.

How widespread a problem is lead exposure in schools? Consider these facts: "American Schools and Universities", an independent publication that compiles data about schools, including information on facility construction, estimates that 88 percent of public school buildings were built before 1980. The ban on lead-based paint was enacted in 1978. And, according to the American Association of School Administrators, in its book, "Schoolhouse in the Red," three-fourths of school buildings are inadequate for learning because of the physical state of their facilities. The book states that the majority of school buildings are too old (74 percent of the nation's school buildings were constructed before 1970); because of budget cuts, schools have been deferring needed maintenance (the estimated cost of deferred maintenance is now \$100 million); and poor maintenance in school buildings is directly linked to the incidence of environmental hazards.

The purpose of AASA's report is to draw attention to the serious need schools have for funding infrastructure repairs, and they include in their report a disclaimer that "environmental mandates should be held to a minimum, and when issued, should be accompanied by the funds necessary to implement them."

We believe this bill meets these criteria.

It is extremely likely that many schools and day care centers have lead paint hazards, and we know schools have problems with drinking water. EPA's own Inspector General's audit of the lead in drinking water program found that 'Many schools testing for lead discovered dangerous levels of lead in their drinking water. Many schools did not test their water, and if they did test, they did not always test adequately.' EPA estimates that every year over 250,000 children are exposed to lead in drinking water at levels high enough to impair their intellectual and physical development.

All of this information clearly illustrates why we need a testing requirement. We will not know definitively if particular schools or day care centers have lead hazards unless we test.

4. Has the PTA looked into how a testing program could be carried out in our schools?

Yes. Some school districts have tested their drinking water, and some have inspected for paint hazards. The issue is not a technical one about whether schools have the capability to test. The question rather centers on willingness and resources. As mentioned earlier in the statement, we believe there must be a partnership at the federal, state and local levels, to work out a plan for eliminating lead hazards. There can be cooperative exchanges of information and technical assistance, and federal and state funding may be provided, but ultimately, the local school district must assume responsibility in providing a safe environment in which children can learn. Parents must be assured that the buildings where they are compelled to send their children are safe from all environmental health hazards.

On the question of resources, we do not expect school districts to assume the costs on their own. But to argue against testing because the cost of clean-up may be high is horrendous. This approach acknowledges that there might be a problem but we don't want to know because we cannot afford to fix it. We believe the requirement should be put in place and school districts can discuss the issue with parents, teachers, and others in the school community, to determine the best approach. Parents

and others in the school community can discuss the problems locally, and devise appropriate solutions once they are given the facts. If a school finds no hazard after testing, there is no problem. If they do, they can assess the best strategy to eliminate the problem, *at the local level*.

Further it must be noted that "abatement" does *not* mean "removal". There are many measures that can be used, as short- or long-term strategies to reduce or eliminate human exposure to lead-based paint hazards. Abatement could mean removal of leadbased paint, if warranted, but removal—if not done properly—could create a new hazard. Abatement could also involve encapsulation or enclosure of lead-based paint; use of certain clean-up methods, etc.

Finally, this bill includes an authorization of appropriations of \$30 million per year for three years. This will not fully meet the need, but if \$30 million per year is funded, it will demonstrate a good first step toward addressing the problem. We believe we will be successful in securing some money, and we will urge all of you to talk to your colleagues on the VA-HUD Independent Agencies Appropriations Subcommittee to help convince them of the importance of providing funds for this program.

The requirement for schools and day care centers to test can also be extremely flexible. The bill does not mandate abatement, and gives states and schools freedom to determine what follow-up actions, if any, to take. We support this flexibility and believe the following factors must also be considered when creating an effective testing program for schools and day care centers:

- School districts should identify a "designee" to coordinate the testing in each school, similar to what was done for asbestos. In this case, federal funds could be distributed through a loan and grant program similar to ASHAA, or awarded to states by formula, and later be distributed to local schools as the state determines.
- For day care centers, the state health, environmental, or other related agency could designate a lead coordinator. With both schools and day care centers, these officials would provide technical assistance, provide information and serve as contacts for people at the local level.
- Parent notification must be a key part of either approach, with specific language directing schools to notify parents, not only of testing, but of results and planned abatement activities and timelines.

In closing on this question, it is worth noting that the Senate, in two successive Congresses, approved legislation requiring schools to test for radon hazards in schools. We strongly support those efforts, but do not understand how the Senate can support a requirement for schools to test for one serious environmental hazard and not another. In fact, we strongly support a comprehensive inspection approach where schools would test for lead, radon, indoor air pollutants, and other environmental hazards, in a coordinated approach. They could develop risk assessments in their buildings and devise overall management plans on how to address each hazard.

5. Does the National PTA have estimates on the cost per school of the inspection and reporting provisions of this legislation?

Yes. We have included with our longer statement, an analysis we did of the cost of testing for lead hazards in schools and day care centers. The Congressional Budget Office (CBO) also did an estimate last Congress, and had higher figures. The difference is due, in large part, because CBO included the cost of testing for lead in soil, and they included secondary schools in the estimate which is no longer applicable.

We urge you to consider our comments, adopt our recommendations and act on lead testing legislation as soon as possible. Requiring schools and day care centers to test for lead hazards in paint and water is a critical step in the fight to end childhood lead poisoning.

Thank you for the opportunity to present our views.

ATTACHMENT

FINANCIAL IMPACT OF A LEAD PAINT INSPECTION REQUIREMENT ON SCHOOLS AND DAY CARE CENTERS

Using facilities data from Child Care America (CCA), an organization that represents private and religious child care centers in the United States, and the U.S. Department of Education's National Center for Educational Statistics (NCES); together with information regarding inspection costs from the U.S. Environmental Protection Agency, the Department of Housing and Urban Development and a few randomly

selected lead inspection and testing companies, we have made some estimates about the financial impact of a lead paint testing requirement on day care centers and schools.

CHILD CARE CENTERS

CCA says there are approximately 65,000 child care centers and 500,000 homes nationwide where children receive care for compensation. Of the 500,000 homes, CCA estimates 75-90% are "unlicensed, unregulated, and not currently receiving federal funds or participating in the Child Care Food Program", meaning they would not be included in the reach of the federal legislation.

Thus, there are:

	65,000	child care centers
+	<u>50,000</u>	10% of licensed, regulated family day care homes
	115,000	total licensed and regulated day care homes and centers
-	<u>17,250</u>	15% of the total that we estimate have been built after 1980 and are not covered
	97,750	day care homes and centers comprising the universe that would be affected by this bill

CCA cites a cost estimate of \$400.00 per day care inspection. We believe this is a high average, particularly since the Cambridge Housing Authority estimates that comprehensive testing of *all* lead paint in a 2-3 bedroom apartment would cost \$125.00. The inspection requirement for day care centers is not for *all* lead paint, just lead hazards, defined in the bill to include "lead-based paint that is chipping, peeling, flaking, or chalking; any surface coated with lead-based paint that is subject to abrasion; any surface coated with lead-based paint that can be mouthed by a child under six years of age; interior dust or exterior soil that contains a dangerous level of lead." In any case, even using the estimates offered by CCA, the total cost for inspecting 97,750 sites would be:

$$97,750 \times \$400 = \$39.1 \text{ million}$$

SCHOOLS

The inspections in schools are targeted to children most at risk. This means that schools not having children aged six or under will have minimal costs, if any. Schools with children under age six would be required to conduct inspections in each room that is used daily or receives significant use by children in Kindergarten or by younger children.

According to data published by NCES in 1990, there are a total of 54,658 public elementary schools and 24,355 non-public elementary schools. "American Schools and Universities" an independent publication that collects data about schools, including information on facility construction—says that 88.7 percent of public schools were built before 1980.

Cost estimates for elementary schools:

	54,658	public elementary schools
-	<u>6,122</u>	those built after 1980
	48,536	public elementary schools built before 1980.
	24,355	non-public elementary schools
-	<u>2,728</u>	those built after 1980
	21,627	non-public elementary schools built before 1980.
	48,536	public elementary schools built before 1980
+	<u>21,627</u>	non-public elementary schools built before 1980
	70,163	total elementary schools built before 1980
-	23,388	using the model EPA developed for the asbestos in schools program, one-third of schools will not qualify for federal assistance on the basis of financial need, thus we subtract one-third.
	<u>46,775</u>	total universe of elementary schools eligible for funds

Based on discussions with EPA and HUD staff, and lead inspection companies, we are estimating, on average, that schools will need to spend \$1,000 per elementary school for lead paint inspection costs. Thus, the total cost for inspecting qualified elementary schools would approximate:

$$46,775 \times \$1,000 = \$46.8 \text{ million}$$

Adding the cost for day care centers and school:

	\$39.1	million for day care homes and centers
+	<u>\$46.8</u>	million for elementary schools
	\$85.9	million

This estimate includes all covered day care centers (not discounting for any that might be ineligible because they lack financial need), and all financially eligible, public and nonpublic, elementary schools built before 1980.

Last year, the Congressional Budget Office did an estimate of the cost of the school testing provisions, but it was much higher because it included a high estimate for soil, and because it included an estimate for secondary schools. CBO's estimate for testing school drinking water in public schools was \$5 to \$10 million.

S. 729 authorizes \$30 million per year for three years, for a total of \$90 million.

We would advocate that the authorization level be increased if abatement is added, and if drinking water provisions are included.

Prepared by: National PTA and National Education association

Revised as of: 6/24/93

STATEMENT OF THE NATIONAL PTA AND THE NATIONAL EDUCATION ASSOCIATION

ADDITIONAL BACKGROUND INFORMATION REGARDING CHILDHOOD LEAD POISONING

This addition to our oral and written testimony presented to the Senate Subcommittee on Toxic Substances, Research and Development, on June 29, 1993, provides additional background information about the health effects of lead poisoning, including effects on neurological development and intelligence in children and fetuses; the pervasiveness of childhood lead exposure; and the main sources of lead exposure, including lead paint, lead dust from lead paint, soil, and drinking water. This statement also outlines the importance of testing schools and day care centers as part of

the necessary lead poisoning prevention effort, and presents reasons why federal legislation is needed at this time.

OVERVIEW

A clear connection exists between eliminating environmental issues and achieving the national education goals. For example, goal number one states that "By the year 2000, all children in America will start school ready to learn."

According to the latest data available, between 3 and 4 million children in the United States have blood lead levels above 15 micrograms per deciliter ($\mu\text{g}/\text{dL}$), a level high enough to cause decreased intelligence, behavioral disturbances, developmental delays, and numerous other, long-lasting effects. Further, the American Academy of Pediatrics estimates that 400,000 children are born each year with blood lead levels high enough to have neurotoxic effects. Clearly, these children will not start school ready to learn.

Goal number two states "By the year 2000, we will increase the high school graduation rate to at least 90 percent." Dr. Herbert Needleman, a nationally known expert on childhood lead poisoning, who has testified on several occasions before the Subcommittee on Health and the Environment, has research data drawing the connection between lead exposure and high school dropouts. Dr. Needleman's study shows that, of children who were exposed to lead when they were young (and accounting for all other mitigating factors), those with the highest lead levels had seven-times greater odds of dropping out of high school, and six-times greater odds of having significant reading disabilities. Do we need more compelling statistics before addressing this problem if we are serious about meeting the educational goals?

Dr. Needleman's studies have been replicated in many other countries, with like results. For reference, an article from the September, 1992 issue of "Phi Delta Kappan" magazine, which is attached to this statement, mentions these studies and further emphasizes the connection between school failure and lead exposure.

THE HEALTH EFFECTS OF LEAD EXPOSURE

Lead poisoning is a silent, costly epidemic that threatens the well-being of between three and four million children in America. **LEAD POISONING IS THE NUMBER ONE ENVIRONMENTAL HAZARD FACING CHILDREN IN THE UNITED STATES, THREATENING THEM AT HOME, AT PLAY, AND IN THEIR SCHOOLS.**

Volumes of data—compiled from the 1988 Agency for Toxic Substances and Disease Registry (ATSDR) Report to Congress entitled, "The Nature and Extent of Lead Poisoning in Children in the United States;" the Centers for Disease Control (CDC) 1991 statement on preventing lead poisoning in young children; the federal government's "Strategic Plan for Elimination of Childhood Lead Poisoning"; and other scientific sources—show that lead's neurotoxic effects at relatively low exposure levels include decreased intelligence, short-term memory loss, reading and spelling underachievement, impairment of visuospatial functioning, poor perceptual integration, poor classroom behavior, increased hyperactivity, low birth-weight, slow growth, hearing loss, and impaired reaction time. Children and fetuses are especially susceptible to these effects, because their neurological systems are rapidly developing. Young children are also more exposed to lead than older groups due to their normal activities, including 'mouthing' of non-food items that may introduce lead dust into their systems. According to the CDC report, young children absorb and retain more lead on a unit mass basis than adults.

Thirty years ago, concern about lead levels in children was reserved for those children exposed to such high levels of lead that they exhibited the harsh physical symptoms of lead poisoning. Since 1970, scientific and health research about childhood lead poisoning has revealed dramatic evidence of adverse effects of lead at lower and lower levels. Most scientists recognize that even though lead toxicity may not be apparent physically, its insidious effects are taking hold in children and manifesting themselves later through attention disorders, learning disabilities, and other related problems.

Last year, as a result of more sophisticated measuring techniques and the compelling data about adverse health effects of lead at lower levels, CDC updated its statement, "Preventing Lead Poisoning in Young Children". The new statement redefines childhood lead poisoning and recommends that the threshold for lead poisoning prevention activities should be at blood lead levels of 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$), down from the previous level of 25 $\mu\text{g}/\text{dL}$.

The revised statement recommends treatment for children with blood lead levels above 15 $\mu\text{g}/\text{dL}$, and suggests that communities with large numbers of children with blood lead levels above 10 $\mu\text{g}/\text{dL}$ develop community-wide educational and environmental programs to address the problem. Further, the report states that "virtually all U.S. children are at risk for lead poisoning." It recommends that all children should be screened for lead poisoning, with a higher priority given to children at highest risk.

New data on the incidence of lead poisoning were released last year, showing extremely high levels among children—in some communities two out of three children are lead poisoned under CDC's new standard. In urban areas, the results are the most frightening, as the following examples illustrate:

- According to a CDC survey, 67 percent of the children tested in Oakland were lead poisoned; 32 percent of the children tested in Los Angeles had levels above CDC's standard;
- CDC reported results of testing of children in low-income neighborhoods in Chicago and found 66 percent of the children were lead poisoned;
- An unpublished study by CDC screened children who sought medical treatment in inner-city hospital emergency rooms in Philadelphia, and found that 29 percent of the children had blood lead levels 50 percent above the poisoning threshold; and
- In a draft report, released last March, EPA used model projections to estimate that there are 166,000 lead poisoned children in six Midwestern states. There are 46,129 lead poisoned children in Illinois, 35,797 in Ohio, 28,225 in Michigan; 22,170 in Wisconsin; 18,551 in Minnesota; and 15,439 in Indiana.

THE PERVASIVENESS OF CHILDHOOD LEAD EXPOSURE

Childhood lead poisoning is pervasive, yet entirely preventable. Progress has been made over the past twenty years, but exposure continues because of ongoing uses of lead. According to a report on childhood lead poisoning, published by the Environmental Defense Fund in March 1990, "each year industry produces, and consumers use and discard, products containing well over a million tons of lead."

While recent studies now document that millions of children from all socio-economic backgrounds and all geographic areas have lead levels high enough to cause adverse effects, in general, children in poverty, are at higher risk of exposure to dangerous levels of lead from their environments. More compelling are the data that demonstrate how low-income minorities, particularly those in dense, urban areas, people who are already struggling with inadequate living conditions, poor nutrition, and lack of access to preventive health care, are at greater risk than the rest of society. In fact, the EPA just issued a report on race and pollution that contains a startling fact. No data were found to document an environmental contribution to the known differences in the rates of disease and deaths, which vary among ethnic groups, except for lead poisoning.

We have discussed why children are more susceptible than adults to the hazardous effects of lead exposure, but must stress that prevention and early detection are key to correcting the problem. The CDC estimates that children's exposure to lead in this country costs society billions of dollars in medical costs, special education, and decreased productivity and earnings due to impaired intellectual development. While the benefits of preventing exposure to children are difficult to quantify, it is impossible to place a monetary value on effects such as decreased school performance or a family's emotional costs.

THE SOURCES OF LEAD EXPOSURE, INCLUDING LEAD PAINT, LEAD DUST FROM LEAD PAINT, SOIL, AND DRINKING WATER

Despite the known dangers of exposure to lead, millions of pounds of lead continue to be released into the environment each year because of the manufacture, use and disposal of lead-containing products. Because lead is an element, it does not degrade, and its toxicity does not diminish with time. The lead that has already been dumped in the environment from years of using leaded gasoline, paint, plumbing supplies, and other products remains and would have to be removed to eliminate the hazard completely.

For the most part, the average blood lead levels in this country have declined over the past twenty years because lead use has been significantly reduced in gasoline and paint. However, lead is still dispersed into the environment, and children are exposed to lead from a variety of sources, including paint, gasoline, solder, plumbing materials, batteries, crafts materials, food, water, dust, soil and air.

Today, lead-based paint is the most common cause of high-dose lead poisoning in children in the United States. The ATSDR estimates that 13.6 million children under the age of seven are potentially exposed to paint containing unhealthy concentrations of lead. Exposure occurs when children ingest the paint, but also when they ingest dust or soil that has been contaminated with leaded paint.

Lead in drinking water is also a significant problem for children. Lead in water comes mainly from lead products used in plumbing—pipes, solder, and flux. While Congress created a program to address this problem in schools, it has not been effective (as discussed below), and EPA estimates that millions of children are still exposed to drinking water in schools with lead levels above what EPA considers acceptable.

Lead-contaminated soil may be a problem at schools as well, particularly those in urban areas, near roadways, or near building exteriors painted with lead-based paint. Children ingest lead from soil by ingesting it through normal hand-to-mouth activity. Although lead emissions from leaded gasoline have largely been eliminated, the Agency for Toxic Substances Disease Registry estimates that 4-5 million metric tons of lead used in gasoline remain in dust and soil, and children continue to be exposed to it. In fact, EPA estimates that up to one-third of the childhood lead poisoning cases in the United States are caused by exposure to lead-contaminated soil.

Together, exposure to lead from paint, paint dust, water and soil pose a significant health threat to children in America.

WE CANNOT RELY ON A VOLUNTARY APPROACH TO TESTING

The Lead Contamination Control Act (LCCA) had very little effect in ameliorating the problem of lead in drinking water in schools. In September, 1990, EPA published the results of an audit of its and the states' roles in implementing the LCCA and other provisions of the Safe Drinking Water Act Amendments enacted in 1986. In brief, the review found that states were not adequately ensuring that school water sources were tested to protect children from lead contamination.

Thus, we learned from the LCCA that the voluntary approach for testing for lead hazards in drinking water did not work. We have no indication to surmise that voluntary testing will spontaneously occur for lead-based paint hazards or lead in soil either. If we want to assure that schools and day care centers are identifying lead hazards, we need a federal requirement.

THERE IS PRECEDENT FOR FEDERAL INVOLVEMENT IN ELIMINATING ENVIRONMENTAL HEALTH HAZARDS IN SCHOOLS

Over the past ten to fifteen years, Congress has worked to eliminate asbestos hazards from schools. The Asbestos Hazard Emergency Response Act (AHERA), which required schools to inspect for hazards, was a good law that made schools safer for children. There are many opponents to AHERA, however, and many of these same people try to draw a parallel between lead testing and AHERA, claiming a lead bill is unnecessary, overly burdensome and costly. In fact, the lead bills Congress has considered are none of these, nor do they resemble AHERA in its scope or coverage.

Contrary to a popular misconception, AHERA *did not require* removal of asbestos. In fact, EPA's own assessment of the program found that only 10 percent of schools removed asbestos, which may have been the best option in some cases. The law was successful in that 89 percent of the suspected asbestos-containing materials were identified in the original AHERA inspections, and the ongoing reinspection process will allow schools to improve where additional attention is warranted. Further, over \$400 million has been appropriated since 1984 to help schools with the costs of abating hazardous asbestos.

One of the reasons AHERA was enacted was to create standards for training of abatement workers. Prior to AHERA, unscrupulous contractors took advantage of schools trying to eliminate asbestos hazards, and in some cases did work that made the asbestos hazard more acute. This will not happen with lead because adequate certification and licensing programs will be in place before schools are required to test.

In any case, while there might still be some debate about the health hazards posed by low-level exposure to asbestos, the threat of lead is far clearer and far more direct. As we mentioned before, lead poisoning is the number one environmental health hazard facing children in the United States. This is not just the position of the PTA, NEA or environmental organizations. Presidents Clinton and Bush and EPA Administrators Browner and Reilly have said this, and the Centers for Disease

Control, the Department of Health and Human Services and many other respected health professionals and researchers concur.

SCHOOLS AND DAY CARE CENTERS MUST TAKE PART OF THE RESPONSIBILITY FOR LIMITING CHILDREN'S EXPOSURE TO LEAD HAZARDS.

Schools must do more to address lead poisoning, not just as an environmental or a health issue, but clearly as an educational issue as well. Bailus Walker, dean of the University of Oklahoma's School of Public Health points out that, "the education community has not really understood the dimensions of this because we don't see kids falling over and dying of lead poisoning in the classroom. But there's a very large number of kids who find it difficult to do analytical work or [even] line up in the cafeteria because their brains are laden with lead."

Since lead poisoning is a silent epidemic that is often undetected unless children are screened, schools and day care centers will not know if they are exposing children to a lead problem without testing. We believe testing for potential health hazards is the responsibility of schools and day care centers, just as it is to assure that their buildings are safe from other physical and health hazards.

Even if in the past schools and day care centers have insisted that testing for lead poisoning extends beyond the scope of their responsibilities, they should now re-examine that position. This is especially essential given all the new data about lead's effects on children's physical and intellectual development, and data proving that low-income minorities suffer the most lead poisoning. Schools must recognize that aggressive behavior, learning disabilities, and hyperactivity caused by lead might be a contributing factor to poor educational performance among the low-income children most affected by lead poisoning.

FEDERAL EFFORTS TO ELIMINATE CHILDHOOD LEAD POISONING ARE COST-EFFECTIVE.

We are well aware that schools face numerous financial crises, including clean-up of environmental health hazards. However, we believe testing for lead hazards is a cost effective activity that will save money in health care costs and special education funds in later years, by preventing continued lead exposure that results in health problems and decreased intelligence for countless children. Attached to the testimony are the financial calculations we made to estimate the cost of testing for schools and day care centers, which we think are minimal compared with the costs of treating a lead-poisoned child.

In addition, in testimony in 1990, Dr. John F. Rosen, Professor of Pediatrics at the Albert Einstein College of Medicine in New York, cited a cost-benefit analysis carried out by CDC and EPA. That analysis revealed that "a congressionally mandated federal effort to eliminate childhood lead poisoning from leaded paint and water will yield, *conservatively*, an annualized benefit of at least \$4.2 billion in terms of *net medical and societal savings*. Stated differently, for each delay of 24 hours to initiate desperately needed federal programs, about \$11.5 million of *net medical and societal benefits* are lost forever."

CONCLUSION

By not acting in efficient ways to eliminate childhood lead poisoning, we are perpetuating at least three very regrettable tragedies:

First, we know where the lead is, how children are exposed, and that children are exposed to unacceptable levels of lead. Yet we spend our resources to limit toxicity once a child has been exposed, rather than working to prevent exposure from the start;

Second, we will never know how badly we have stunted the academic and career potential of the current generation of lead-poisoned children, nor can we ever recoup the capacity that has been lost; and

Third, this disease harms children who cannot act to prevent it. We continue to allow children to be poisoned during their most important years in terms of educational and physical development.

Lead poisoning is not a "new" disease; in fact it has been a fact of life for *centuries*. In the early years of our own country, Benjamin Franklin lamented in a letter sent to a friend in 1786, that the bad health effects of lead "taken inwardly" were "at least above sixty years old." His closing words in that letter unfortunately still ring true today: "you will observe with concern how long a useful truth may be known and exist, before it is generally received and practiced on."

STATEMENT OF ANNE GUTHRIE, DEPUTY DIRECTOR, ALLIANCE TO END CHILDHOOD LEAD POISONING

Thank you for the opportunity to testify today. My name is Anne Guthrie and I am Deputy Director of the Alliance To End Childhood Lead Poisoning, a national, non-profit, public interest organization focusing exclusively on ending the epidemic of childhood lead poisoning. The Alliance was formed in 1990 by leaders in public health, environmental protection, low-income housing, education, and children's welfare in response to longstanding frustration about the lack of effective national efforts to prevent childhood lead poisoning.

The Alliance's mission is to bring all resources to bear—other organizations, scientific and technical knowledge, public policy, economic forces, and community action—to raise awareness and change perceptions about childhood lead poisoning and to develop and implement effective national prevention programs. Our comprehensive approach to the problem incorporates education to raise awareness, advocacy to promote action, and policy support to encourage workable approaches.

The Alliance is funded about half by private foundations and half by special project grants from Federal agencies. We accept no funds from industries with a direct economic stake in this issue: the lead or paint industries, cleanup contractors, or abatement product manufacturers.

The Alliance commends the Committee for its continued commitment to protecting Americans from the serious threat of lead poisoning. In the past 3 years, there has been a great deal of progress in the national effort to prevent childhood lead poisoning. However, the challenges posed by lead's multiple sources and pathways are numerous and complex, so there is a great deal left to do. The Alliance stands ready to work with the Members and staff of this Committee and assist in any way possible in reaching these goals.

Continued Problem of Lead Exposure

We were asked to address four issues today, and I will address them in sequence. First is the issue of whether lead exposure is a continuing problem for humans and the environment. For this question, there is little doubt. Lead has been repeatedly and consistently shown to be toxic to both children and adults, even at very low levels of exposure. And, as scientific evidence has accumulated over the years, our degree of concern has only heightened. We now know that levels of lead exposure once thought to be safe are toxic. Children are particularly vulnerable to harm as they absorb lead more readily than adults and appear to suffer worse effects due to their young nervous systems. In recognition of the steadily accumulating body of evidence on lead's toxicity, the blood lead level of concern in children has been lowered at least four times over the past thirty years—most recently, in October 1991.

Moreover, we are all at continued risk of exposure to lead from either historical or new sources of lead. For instance, fully 1/2 of the U.S. housing stock contains some lead-based paint (LBP). In addition, humans continue to be exposed to lead through new products—exposures that can occur during mining or smelting of lead, product manufacture, product use, and after product disposal or recycling.

Most distressing, however, is the number of people suffering from lead poisoning, as indicated by the high prevalence of lead poisoning. Federal agencies now estimate that 10–15% of American preschoolers have blood lead levels above the Centers for Disease Control's (CDC) current level of concern, leading the Department of Health and Human Services (HHS) and the Environmental Protection Agency (EPA) to declare lead poisoning the number one environmental health hazard to children. And, the available data about the prevalence of lead poisoning in adults is striking as well, despite various occupational health regulations. In California, which requires reporting, elevated blood lead is the 10th most frequent condition among adults. (A regulation recently proposed by the Occupational Safety and Health Administration (OSHA), as required by Title X, finally provides protection for workers in the construction industry, which includes the lead abatement industry.)

Recent Progress in Federal Law

Before I address the specific provisions of S. 729, I would like to briefly review the groundwork laid by Title X of the 1992 Housing and Community Development Act. In order to prompt action on a broad scale, two new concepts were adopted.

The first was to focus on lead based paint hazards, as opposed to the presence of the lead based paint. (The statute expressly defines the conditions that constitute a hazard.) This concept is critical because it allows targeting of resources and defuses

the oft-heard argument that "this problem is too expensive and there is no place to start."

The second was to establish dual tracks of interim controls and abatement. The addition of short-term measures known as interim controls is significant as a means to protect children while their homes await abatement. Because of their lower initial costs, interim controls are also important as a means of promoting wide-scale action. Forthcoming federal guidelines will provide explicit instructions on what they are and how to carry them out, and will include requirements for ongoing monitoring to ensure their protectiveness.

Title X was also intended to provide quality controls on the emerging abatement industry and to protect consumers and ensure that abatements are, in fact, done safely. Title X established three significant requirements in this area:

First, lead-based paint inspectors, risk assessors, and abatement supervisors must be licensed and workers must be trained through an accredited program. Title X was written with the expectation that States would administer the licensing and accreditation programs and that EPA would establish standards for such programs. And, in fact, there is legislation pending in a number of states across the country.

Second, EPA is required to promulgate health-based standards for what constitutes a "hazardous" level of lead in interior dust and bare soil. The deadline established by Title X for these regulations is March, 1994.

Third, the Department of Housing and Urban Development (HUD) is required to develop guidelines for abatement and interim controls by October, 1993. The guidelines will provide detailed instruction on the procedures for each step of lead hazard evaluation and control, including clearance testing following abatement. Technically, adherence to the procedures set forth in the guidelines will only be required for spending federal money, but there is every expectation that the guidelines will quickly become a national standard.

Title X then applied this new framework to the segment of the U.S. housing stock over which it has the most control, that is, federally owned, assisted, and insured housing. The law established clear requirements and deadlines for action through-out federal housing programs. For instance, the law requires that the federal government abate hazards in old (pre1960) homes owned by the Resolution Trust Corporation before selling them to private citizens.

Provisions of S. 729

The issues addressed in S. 729 are indeed important in protecting children. The bill addresses several unmet needs, such as controlling unnecessary uses of lead and encouraging more responsible uses of lead and more recycling. We recognize some legitimate ongoing uses of lead, but not all current uses are necessary or appropriate. For instance, the July, 1993 issue of *Consumer Reports* reported that 650,000 backpacks, tote bags, fanny-packs, and other carryalls adorned with the children's characters "Barney" and "Baby Bop" had to be recalled because the surface coatings and inks "may contain excessive lead." In the vast majority of such cases, acceptable substitutes are available. A society already suffering the burdens of undue exposure to lead should certainly be examining its actions that may result in additional human or environmental lead exposures. The Alliance concurs with the testimony of the Environmental Defense Fund with respect to the new use and product restriction provisions.

S. 729 also recognizes the importance of accurately tracking the prevalence of childhood lead poisoning. The Alliance concurs that laboratory proficiency programs and blood lead surveillance activities are important goals. However, it is our understanding that laboratories performing blood lead analyses are already subject to the Clinical Laboratory Improvement Act (CLIA), which requires all labs to be certified. We also understand that blood lead is expressly included as one of the proficiency tests under CLIA. Furthermore, we understand that the Centers for Disease Control (CDC) has the authority to provide blood lead reference materials.

A more complicated issue is the proposed mandate for blood lead reporting. Normally, decisions to make a disease reportable are made through a consensus process involving state epidemiology, laboratory, and public health officials with the guidance and input of CDC. The voluntary consensus process has proven to be very effective in overcoming state concerns about the administrative burdens associated with implementing reporting on a uniform basis. If a federal mandate for blood lead reporting was enacted, it would be the *only* federal reporting mandate for a non-quarantinable disease. More important, however, is the fact that CDC is already working with states to develop a national system for blood lead reporting. CDC's lead poisoning

program has cooperative agreements with 8 states to develop and refine data collection and reporting systems, and is about to award another set of grants. In addition, at least 28 states and the District of Columbia had already mandated reporting of blood lead levels by 1991, and CDC is working to make the reporting systems compatible.

Section 408 on classification of abatement debris also focuses on a critical problem to widespread and cost-effective abatement. Currently, abatement debris is regulated under the Resource Conservation and Recovery Act (RCRA), however, its application in the real world has caused tremendous confusion. Millions of dollars are being wasted and efforts to clean up serious lead hazards in housing are being frustrated by uncertainties about the proper handling and disposal of bulky items such as old doors and windows painted with lead-based paint.

There is no doubt that lead paint chips, stripper solvents, concentrated lead dust, etc. are hazardous and should be treated and disposed of as such. At the same time, the great mass of debris from major abatement projects is bulky construction debris which, if treated as hazardous waste, can increase the overall cost of abatement projects by 20 to 30%.

The confusion arises in part because the RCRA waste testing requirements were really designed for application to large commercial industries, and are difficult for the small businesses that constitute most abatement contractors since they are complex and provide no explicit guidance on testing abatement debris, such as doors and windows. The Alliance concurs with the legislation's intent to clarify disposal requirements, but we feel that guidelines are not enough. It is our understanding that EPA currently has the authority to undertake a rulemaking to bring abatement debris under TSCA regulation and to exempt this category of waste from RCRA regulation. Title X's TSCA provisions expressly define the abatement process to include "disposal" of abatement debris, so no additional regulatory authority should be needed for EPA to act. The Congress has been pressing EPA for action on this issue for 5 years. Encouragement from this Committee on this matter could be of enormous assistance in prompting timely action.

School and Day Care Provisions

S. 729 also recognizes that schools and day care centers can pose real lead hazards to young children. These hazards clearly deserve attention and they should be addressed in a protective, rational fashion. Since Title X begins to address the hazards of lead-based paint in homes, it may spur actions that make private homes being used to provide family day care lead-safe, but this subset is certainly not sufficient to protect all children. The inspection requirements and grant provisions of S. 729 are appropriate steps to take towards the goal of protecting children. The Alliance would like to offer some thoughts about issues related to effective implementation of such requirements.

The Alliance urges the Committee to consider the prioritized, risk-based strategies of Title X for incorporation into any scheme to address schools and day care centers. For instance, a key concept of Title X, and one that is reflected in the phased in deadlines for compliance, is the "worst-first" approach. Title X requires action in homes on a schedule targeted to the degree of hazard, as determined by the age of housing. (Due to declining lead use in paints over time, and dilapidation associated with age, the oldest homes frequently pose the worst hazards.) Thus, the Committee may wish to use age of building as a primary default indicator of priority, in a jurisdiction which is unable to assess the multiple factors listed in section 407.

Schools and day care centers also provide a means of setting priorities that is impractical for houses, that is, the age of children in the facilities. Medical evidence shows that children's blood lead levels increase steadily up to at least 18 months of age and can change dramatically in a relatively short period of time. The most rapid rate of increase occurs between 6 and 12 months of age, and blood lead levels peak at 18-24 months. Therefore, efforts targeted to the youngest children should be a very high priority, suggesting that day care centers be addressed as the first priority before schools. (We recognize that individual facilities may serve both functions, so some flexibility will be appropriate.)

Title X also established two types of hazard evaluation: inspection and risk assessment. Inspections under Title X are designed merely to identify the presence of lead-based paint on a surface-by-surface basis. Inspections are appropriate when a property owners wishes to abate or remove all LBP. In contrast, risk assessments are designed to measure current exposure levels and to provide guidance about alternative strategies for reducing lead hazards. Risk assessments are appropriate when a property owner is unsure about how to proceed in a given unit, and desires

a comprehensive assessment of the hazards posed and alternative approaches available. The range of interventions available to property owners—and the costs of implementing them—is considerably broader following a risk assessment. The Alliance believes that the provisions of S. 729 should permit school and day care owners the same range of evaluation options as those provided under Title X. In addition, given the complexity of the issue, and the fact that lead from other sources besides lead-based paint may pose a hazard to children, the Alliance recommends that any evaluation requirements should be accompanied by a requirement for EPA to develop guidance for schools and day care centers in assessing and reducing lead hazards, focusing on the most common hazard of lead-based paint, but recognizing the potential threat of lead in other media.

The Alliance believes that the disclosure provisions following school and day care center inspection are likely to prompt voluntary action to reduce lead-based paint hazards, at least in more affluent school districts or communities. However, there will clearly be many facilities for which funds to abate the hazards simply do not exist. It is also clear that federal budget pressures make substantial expansion of discretionary grant programs unlikely. Recognizing that meeting this need is probably outside the jurisdiction of this committee, the Alliance nevertheless wants to bring your attention to a legislative proposal to provide federal funds expressly for this purpose. We believe that the proposed legislation, which is discussed in the following section on reducing lead in the environment, naturally complements and advances the objectives of this bill for schools and day care centers.

Reducing Lead in the Environment

The largest significant source of lead exposures to children is in the indoor environment. There is a general consensus among federal agencies and leading experts that lead-based paint (LBP) is the source of the most intensive exposures and that lead in surface dust is the most common pathway of poisoning. While lead was banned from residential paint in 1978, more than 3/4 of older homes contain some leaded paint—an estimated 57 million units.

Title X provides the beginning of a national infrastructure for lead hazard evaluation and abatement, it requires the Federal government to become a model landlord, and it begins to pressure the private housing market to recognize the hazards of lead-based paint. However, it is also clear that there is a segment of the housing stock that will require public subsidy for lead paint abatement. It is also clear that federal budget pressures make substantial expansion of discretionary grants programs unlikely. So, the biggest unmet need is money for abatement in low income housing.

Fortunately, a potential solution is at hand. Last week, Representative Ben Cardin introduced legislation (the "Lead Based Paint Hazard Abatement Trust Fund Act of 1993"—H.R. 2479) that would provide \$1 billion per year over 10 years for abatement of LBP hazards in low-income private housing. Senator Bill Bradley has indicated his intention to introduce similar legislation in the Senate very soon.

In addition to providing money for abatement, the trust fund would help create new jobs in the abatement industry, many in the communities most affected by lead poisoning. It would allow us to do better primary prevention, thereby reducing the medical and social costs resulting from lead poisoning. And, it would provide economic incentives for lead substitution and recycling. The Alliance urges the members of this Committee, who have shown such leadership in lead poisoning prevention, to join as original cosponsors in the Senate.

In closing, I would like to thank you for your interest and leadership on this important issue. Thank you for time and attention. I would be pleased to answer any questions.

ALLIANCE TO END CHILDHOOD LEAD POISONING

July 22, 1993

Senator Harry Reid
Chair
Toxic Substances, Research
and Development Subcommittee
Committee on Environment and
Public Works
U.S. Senate
Washington, D.C. 20510

Dear Chairman Reid:

This information is submitted for the record in response to questions asked at the June 29, 1993 Subcommittee hearing on S. 729, the Lead Exposure Reduction Act of 1993.

Question: To what extent do substitutes for [lead chromate] paints and other products that are banned by the bill currently exist?

Answer: As stated in the written testimony of Karen Florini for the Environmental Defense Fund that was endorsed by the Alliance To End Childhood Lead Poisoning, it is our understanding that adequate substitutes exist for lead chromate paints, as well as for curtain weights, fishing sinkers, plumbing fittings and fixtures, and packaging. It is also important to note that EPA would retain the authority to increase or decrease the targeted percentages—a provision which provides for adjustments to be made as necessary if the availability of substitutes becomes a legitimate problem in a particular instance.

With respect to lead chromate paints, the largest consumer of lead chromate pigments is the paint and coatings industry, and over 1/2 of these pigments are used for yellow traffic markings, according to testimony provided by J. Lawrence Robinson for the Color Pigments Manufacturers Association, Inc. at the June 29 hearing. However, adequate substitutes for this use do exist, as evidenced by several states, including Virginia, that have already moved to substitutes. Reducing this use of lead is particularly worthwhile as the continued use of leaded paints on roads and highways continuously contaminates the environment with new lead.

Question: On page 3 of your testimony, you express support for S. 729 by stating that it addresses unmet needs. What are these unmet needs, in the estimation of your organization, and how does this bill go beyond EPA's lead strategy?

Answer: One unmet need is that for restrictions on unnecessary uses of lead. As indicated in our written statement, not all current uses of lead are either appropriate or reasonable. In fact, some are downright frivolous. The provisions of S. 729 would force our society to make conscious decisions about our continued uses of lead in new products, rather than finding ourselves dealing with unintended consequences due to inadequate consideration beforehand.

Another unmet need addressed by S. 729 is the requirement to assess the lead-based paint hazards that can be posed by day care centers, as a first priority, and school facilities used by very young children, as a second priority. As discussed at the hearing, the Alliance would urge that risk-based strategies be used to set priorities for assessing and reducing hazards in schools and day care centers, and that the S. 729 incorporate the full range of concepts, such as risk assessments as an alternative to inspections, developed in Title X of the 1992 Housing bill.

Thank you for the opportunity to participate in the hearing and to provide this additional information. Please do not hesitate to contact us if we can be of any assistance to you or your staff.

Sincerely,

Anne Guthrie
Deputy Director

STATEMENT OF VICTOR J. KIMM, ACTING ASSISTANT ADMINISTRATOR,
OFFICE OF PREVENTION, PESTICIDES, AND TOXIC SUBSTANCES, ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman and members of the Subcommittee, I want to thank you for the opportunity to appear before you today to discuss S. 729, "The Lead Exposure Reduction Act of 1993" and the U.S. Environmental Protection Agency's (EPA) efforts

to reduce lead exposures. Lead can pose a significant public health threat—and our children are the most vulnerable. That is why the Administration is firmly committed to reducing human exposure to lead to the fullest extent practicable, focusing particularly on reducing the risk to children. This commitment is reflected in EPA's FY 1994 budget request increase for lead abatement activities. Further, I would like to commend Senator Reid for his leadership role in trying to reduce the health risks associated with exposure to lead.

Considerable data suggest a correlation between elevated blood lead levels and delays in early neurological and physical development, cognitive and behavioral alterations, alterations in red blood cell metabolism and vitamin D synthesis, and kidney impairment. The risks associated with lead exposure demand attention from federal, state and local governments; health care and environmental professionals; as well as parents and citizens. Average blood lead levels in children have declined dramatically over the past 10 to 20 years, from about 15 $\mu\text{g}/\text{dl}$ to about 5 $\mu\text{g}/\text{dl}$. This decline has been largely affected by actions taken by the federal government. The federal government has banned the use of lead in house paint and in the solder and pipes used in public drinking water systems and it has virtually removed lead from gasoline. Also, the Food and Drug Administration has recently proposed a ban on all food cans containing lead solder and it has proposed a lead standard for bottled water.

While we estimate that blood lead levels in U.S. children have declined by a factor of three in the past two decades, continuing scientific research has demonstrated that harmful effects may occur at blood lead levels previously considered safe. Based on this new information, our threshold level of concern for lead toxicity has declined steadily over the past decade. In the fall of 1991, the Department of Health and Human Services (HHS) announced a new and lower "threshold of concern" for lead levels in children's blood—10 $\mu\text{g}/\text{dl}$, or less than half the level of 25 $\mu\text{g}/\text{dl}$ identified by the Centers for Disease Control (CDC) in 1985. While much has been accomplished, a large number of children are still at unacceptable levels of risk and much remains to be done.

Current Key Activities in EPA's Lead Program

Over the last few years, EPA has focused its lead program on addressing the most serious sources of lead exposure in children—lead-based paint and the dust which is formed as the paint deteriorates, and lead-contaminated soil and drinking water.

The majority of the most serious cases of childhood lead poisoning are caused by exposure to paint and dust from lead-based paint, both inside of a building and in the area where the dust has settled on the soil. In the fall of 1992, President Bush signed Title X of the Housing and Community Development Act of 1992, or "Title X" as we call it, into law, providing EPA with the authority to develop the lead abatement infrastructure necessary to address this problem. Title X provides for a comprehensive approach to dealing with lead-based paint hazards in the nation's housing stock. The new law requires a number of federal agencies to contribute to the effort to reduce lead-based paint hazards, including the Department of Housing and Urban Development (HUD), HHS, and the National Institute for Occupational Safety and Health (NIOSH). Using our authority under Title X, we are developing training accreditation and certification programs for lead abatement professionals, building laboratory programs, enhancing public education, and identifying lead hazard levels.

Training and Accreditation

The new law requires EPA to promulgate regulations by spring of 1994 ensuring that individuals engaged in lead-based paint abatement activities are trained, training programs are accredited, and contractors are certified. The Agency is also required to set standards for performing abatement activities to ensure reliability, effectiveness, and safety.

Prior to the passage of Title X, EPA had testified at hearings on other lead legislation that it would have been inappropriate to require the federal government to directly accredit and train lead abatement professionals. We felt that this was a more appropriate role for the states. Title X addressed this concern by requiring EPA to develop and promulgate a model State program to be adopted by any State seeking to administer and enforce a training and accreditation program. Although we have concerns with tight time constraints, EPA fully intends to meet the Title X statutory deadline of April 28, 1994, for promulgation of a final rule which will include a model State program.

Laboratory Programs

Under Title X, we are establishing protocols, criteria and minimum performance standards for laboratory analysis of lead in paint, dust, and soil. These protocols, criteria and performance standards are being incorporated into a laboratory accreditation program with two parts: a proficiency test and an on-site audit. Laboratories wishing to be accredited must demonstrate their proficiency by testing for lead in samples of paint, dust, and soil on a quarterly basis. Over 200 laboratories are involved in this program, and have already received samples for testing. Through a formal agreement, EPA is providing NIOSH \$150,000 per year for three years to evaluate these test results. EPA is now working to set up the second part of the program, the on-site audit. Rather than visiting each lab individually, EPA plans to rely on the auditing capabilities of private and public laboratory accrediting organizations which will be formally recognized by EPA through a Memorandum of Understanding (MOU). EPA is developing a comprehensive set of requirements which accrediting organizations, and the laboratories themselves, must meet. The requirements will be incorporated into these MOUs.

Public Education

I am very pleased to report that, with the help of other federal agencies, we have established a lead hotline and clearinghouse as required by Title X. We have also published a lead brochure designed to give practical advice to parents and others who are involved with young children. The lead hotline, an automated toll-free service, provides callers with copies of this brochure and several related fact sheets about prevention of lead poisoning. Our clearinghouse, staffed by information specialists who have received training on various lead-related topics, gathers and disseminates a wide range of both technical and nontechnical lead-related information. Callers have access to the clearinghouse through a toll-free telephone number. Together with the National Safety Council, we kicked-off a campaign in March aimed at placing ads in the popular media—on television and radio and in print—to alert the public about the risks associated with lead exposure. This campaign advertises the number of the lead hotline—1-800-LEAD-FYI.

Title X also requires that EPA, jointly with HUD, promulgate rules for the disclosure of lead-based paint hazards in housing built before 1978 which is offered for sale or lease. This requirement calls for prospective purchasers to be notified of known lead hazards, allowed 10 days to have a lead inspection conducted, and given a lead hazard information pamphlet. The requirement also calls for a warning of the existence of possible lead hazards to be printed in purchasing contracts. Title X also requires that EPA promulgate a second rule to require renovators of target housing to inform their customers of potential lead risks. EPA expects to meet the statutory deadline of fall of 1994 for promulgation of both of these rules. We are also producing another lead hazard brochure to be given to potential purchasers, renters, and renovation customers.

Hazard Identification

Under Title X, we are also promulgating regulations identifying lead-based paint hazards, lead-contaminated dust, and lead-contaminated soil. Because we recognize the importance of these regulations to the government's entire lead abatement program, we are coordinating this work with technical and non-technical experts in the private sector and other federal agencies, and with our own hazardous waste offices. We intend to promulgate this regulation by April 1994, meeting the statutory deadline. As you know, this regulation will directly address urban soil which has been contaminated by lead from paint and gasoline, or by industrial sources. We are continuing to analyze the results of the Three-City study, a \$15 million study of soil contaminated by non-industrial sources in Boston, Baltimore, and Cincinnati, as we develop these regulations.

EPA is also conducting a study of potential hazards associated with renovation and remodeling activities. The results of the study are scheduled to be published by the spring of 1994. We are currently determining what types of activities should be covered by such a study. Along with the study, we will be issuing guidelines on how these activities are to be conducted. Ultimately, we will use the results of the study and experience in using the guidelines to revise the accreditation and certification regulations mentioned earlier to cover renovation and remodeling.

Lead in Drinking Water

We are also continuing to address the hazards associated with lead in drinking water. While virtually everyone is exposed to some lead in drinking water, average exposures from drinking water are not very high. Lead occurs in drinking water primarily due to corrosion of lead-bearing materials in water supply distribution systems and in household plumbing. The highest exposures occur in areas with corrosive waters and in buildings with lead pipes containing solder, brass faucets, or drinking water coolers containing lead. Concentrations vary widely.

We estimate the *average* contribution to a child's blood level to be approximately 1.0 to 2.0 $\mu\text{g}/\text{dl}$, but a small fraction of the population may be exposed at much higher levels. As with soil and paint contamination, exposures caused by drinking water are due primarily to past practices, especially the use of lead in solder and pipes in household plumbing and water distribution systems and the continued use of lead solder. In addition, the installation of new brass and bronze plumbing fixtures may result in a significant exposure to lead. EPA is considering how to reduce risks through a regulatory or voluntary control program as well as additional research and education efforts. We are currently working with the National Sanitation Foundation (NSF) to establish voluntary standards for lead leaching from fixtures and faucets.

In 1988, EPA proposed revisions to the National Primary Drinking Water Regulation for lead under the Safe Drinking Water Act (SDWA). We promulgated the new rule in May 1991. The major provisions of the new rule require water suppliers to monitor lead levels in high-risk homes, under conditions expected to produce the highest concentration of lead, such as in first-flush, standing water. The new rule also requires water suppliers to implement optimal corrosion control treatment to minimize the corrosivity of the water and to conduct public education if lead concentrations are above the action level established by EPA. We estimate that actions by water suppliers to comply with the rule will result in reduced lead exposure for over 130 million Americans, including over half a million children whose blood lead levels will be brought below 10 $\mu\text{g}/\text{dl}$. In the two years since this rule was promulgated, we have published a number of technical and regulatory guidance documents intended for both state agencies and public water suppliers. We also have an ongoing program to conduct training seminars for state regulators to provide guidance on administering and enforcing the requirements of the rule. The Office of Drinking Water also developed an extensive program to help schools correct lead contamination problems in accordance with the Lead Contamination Control Act (LCCA) of 1988. This program includes: distributing guidance and a testing protocol to monitor for and remedy lead contamination in schools' drinking water; conducting training on proper testing and remediation procedures; publishing brands and models of water coolers that are not lead-free; and listing certified analytical laboratories. Our guidance and training have been disseminated to thousands of schools across the United States.

Additionally, EPA's Office of Drinking Water continues to oversee state implementation of the 1986 ban on plumbing products that are not lead-free, and has established a Safe Drinking Water Hotline to provide information to hundreds of callers each month on the LCCA, the lead ban, and other aspects of lead in drinking water.

Lead in Products

EPA also recognizes that lead in products can pose an exposure risk. In response to a petition the Agency recently received under section 21 of the Toxic Substances Control Act (TSCA), we are considering drafting a rule to regulate lead fishing sinkers, which pose risks to waterfowl. We are also investigating the use of rulemaking under TSCA to support the lead-in-drinking-water program. One potential rulemaking would limit the amount of lead that is leached from brass and bronze plumbing fixtures. Selected studies appear to indicate that these fixtures can be a significant source of lead in drinking water. Another rulemaking being investigated would limit the sale of lead solder in order to support the SDWA ban on lead solder used to join pipes. We are also assessing other products and uses of lead in order to determine if the health or environmental risk is "unreasonable" and should be regulated under TSCA. One use under investigation is industrial lead paint used on bridges and water towers. The Agency is investigating this use by assessing current risks, and analyzing the cost, feasibility, and relative risk of potential substitute coatings. The Agency is also exploring a rule, which would be similar to the inventory described in S. 729, to require advance notice from anyone intending to manufacture or process lead for a new use, thus giving the Agency an opportunity to review the intended new use and, if appropriate, limit or ban it.

Because lead can present risks through a wide range of media, the Agency has clustered the rules and policies addressing lead risks from these various media. This approach will allow the Agency and the public to review the regulatory programs of each of EPA's program offices as a whole, and it will help ensure that lead pollution is not simply transferred from one medium to another.

Our Comments on the Provisions of S. 729

Restricting the lead content in products

As I mentioned above, EPA recognizes that exposure to lead in certain products can pose a risk. A few decades ago, it was common to add lead to household paint—we now see that exposure to the dust which results when this paint deteriorates has become the main source of childhood lead poisoning. Because of this, lead-based paint for use in households was banned nation-wide in 1978. In the spirit of pollution prevention, a concept that EPA's new Administrator, Carol Browner, has embraced, we feel it is crucial to avoid potential health risks from future sources of lead exposure now. For this reason, we agree with the authors of S. 729 that an inventory of lead-containing products can be useful in identifying potential high-exposure uses. In fact, EPA staff are now working on developing such a list of lead-containing products. We would be pleased to share with you and your staff our technical expertise on how to effectively develop an inventory and control any new uses which may be found to cause risks from exposure.

Of course, the *presence* of lead in a product does not necessarily mean that lead *exposure*, and thus health risks, will occur. While we applaud the intent of S. 729 to prevent pollution in controlling the amount of lead in certain products, it would be most effective and efficient to focus on products where risks from exposure exist. Another important point to raise when considering restricting the lead content of a certain product is which materials may enter the market as a substitute for that lead and the toxic implications of these materials. As noted earlier, EPA is currently responding to a petition to restrict fishing weights because of their lead content. In our consideration of this petition, we have identified several substitute materials that may be as or more toxic to waterfowl than lead, such as zinc, copper and brass.

Battery Recycling

While EPA believes that battery recycling is a laudable goal, and that the recycling program contained in this bill appears reasonable, EPA has some concerns about a federal rule requiring lead-acid battery recycling. The large number of potentially regulated parties would make this difficult to enforce on a Federal level. In addition, the majority of states already have mandatory battery recycling programs to limit the risks associated with disposal of lead-acid batteries. EPA is developing a response to a petition submitted under section 21 of TSCA to address the recycling of all batteries including those containing lead, mercury and cadmium.

Controlling Lead Exposure in Schools and Daycare Centers

We are pleased that this bill places emphasis not only on the exposure risks in children's homes, but also on other areas where they spend significant amounts of time. However, EPA has several concerns about S. 729's requirements for inspection and abatement of lead hazards in schools and daycare centers. Our first concern is that the primary focus of the bill should be on daycare centers. As you know, children six years of age or younger are the population most vulnerable to lead exposure. Therefore, we feel that inspection for hazards in daycare centers, where the most vulnerable population would be, is a more appropriate use of limited grant funding than inspection for hazards in schools. Moreover, the inspection program should be focused on those daycare centers where the greatest opportunity to reduce risk exists—for example, inspection of centers could be prioritized based on the number of children they serve or the age of the building in which they are located.

In addition, we are also concerned about the nation's capacity to implement the inspection program as it is described in S. 729. Without extending the phasing-in period in which inspections would be required for daycare centers, we risk overwhelming an inspection and abatement industry which is just now in its infancy. We should be similarly concerned about the capacity of the states to ensure that lead hazards in daycare centers are inspected and abated. We feel that such an inspection requirement is more appropriately managed on a state level, where daycare centers are licensed. However, we must remember that we are already encouraging states to take on significant responsibilities in implementing a number of provisions in Sections 402 and 406 of Title X.

Conclusion

In conclusion, let me stress that EPA continues to be concerned about the risk posed by lead exposure, particularly to children. At this point, the Main priority of the Agency's lead program is implementation of Title X. While we applaud the goal of S. 729 to control the various sources of lead poisoning, we are concerned that new proposals which would significantly add to the responsibilities EPA has had to undertake within its lead program, unless very narrowly focused and/or phased-in over time, could jeopardize our ability to successfully meet currently legislated mandates.

Again, thank you for inviting me to share with you the achievements and continuing activities of the Agency's lead program. We support Senator Reid's leadership in reducing the health risks associated with lead, and reiterate our commitment towards this goal.

I would be pleased to answer any questions that the Chairman or the Subcommittee members may have.

TESTIMONY OF ROBERT J. MUTH, CHAIRMAN, LEAD INDUSTRIES ASSOCIATION, INC.

Mr. Chairman and Members of the Subcommittee, I am Robert J. Muth, Chairman of Lead Industries Association, Inc., a trade association of lead producers and industrial consumers of lead. I am also Vice President of Asarco Incorporated, a major producer of lead and other metals. I appear today on behalf of LIA, in response to the Subcommittee's June 17 invitation which raised a number of questions for which the Subcommittee is seeking answers. My testimony will address the questions raised in the Subcommittee's letter and will discuss our concerns with S. 729.

When earlier forms of the bill were introduced in previous years, LIA supported a number of their provisions, principally those concerned with abatement of lead-based paint in deteriorated housing. Many of these provisions have since been enacted, and we believe, Mr. Chairman, that you deserve much of the credit for these legislative changes.

At the same time, however, we opposed the provisions in earlier bills that were designed to ban or reduce the use of lead in current products. In that connection, the Subcommittee's letter of June 17 raised the question whether lead exposure is a continuing problem. Our answer is that former, highly dispersive uses of lead compounds such as in residential paint and plumbing solders have been terminated or reduced to a minimum. Further, the production, use and disposal of lead and lead products are highly regulated today. Therefore, lead exposure does not create problems warranting the severe restrictions and regulatory burdens imposed by S. 729.

In light of this, we believe provisions that single out lead for special legislative treatment in the way S. 729 would do are unnecessary, punitive and bad public policy. We also believe that decisions on whether to ban the use of lead in particular products should be made pursuant to generally applicable standards by competent agencies, just as is done with the hundreds and perhaps thousands of other metals and chemicals that are potentially toxic but highly useful to society. Though the provisions of the earlier bills that concerned us have been altered somewhat, they continue to be aimed at curbing lead use without regard to particular risks and benefits and we continue to oppose them.

These provisions are based on the mistaken premise that the production, use and disposal of lead and lead products still may pose unique, severe risks, and that legislation is appropriate in order broadly to ban or reduce the use of lead. Indeed, much of the bill appears to be aimed at reducing the use of lead even where it seems clear that no risks of any consequence are present. This should be cause for concern even if regulatory resources were not scarce, but the realities are that such resources are scarce and should be devoted to real environmental risks, which is not the case here.

The production, use and disposal of lead are effectively regulated today, and there is absolutely no reason for the enactment of legislation that treats lead any differently from any other potentially toxic material. Furthermore, lead is a vital material for manufacturing a wide range of high technology, health care and energy products that are important to our economy, and is likely to be of benefit in many new products such as the electricity-powered automobile. And if past is prologue, it is a virtual certainty that still new uses that are safe and beneficial will be found that we are unaware of today.

Attachment 1 to my statement examines every aspect of the lead production, use and disposal chain and demonstrates that, under today's regulations, the risks are

negligible, or are being dealt with adequately under existing legislation. Let me cite a few facts from the Appendix.

- A 1991 study by ENVIRON Corporation—a copy of which appears as Attachment 2 to my testimony—concluded that all current lead-containing products, taken together, contribute an average of less than 0.1 of a microgram per deciliter to the blood lead levels of U.S. children. In other words, if current product exposures—as opposed to those from former, dispersive products such as lead-based residential paint—were the only contributors to children's blood lead levels, the average blood level of U.S. children would be only 1 percent of the 10 $\mu\text{g}/\text{dl}$ level set by the Centers for Disease Control as the threshold of concern.

- EPA estimates that the average blood lead level of U.S. children aged six or less—those considered most affected by lead exposure—is half of the CDC threshold. By the way, this is a level that compares quite favorably with other industrialized nations.

- Recent surveys by public health agencies indicate that the average blood lead level of children who live near lead smelters is at or near EPA's estimated national average, and is declining.

- A recently completed sampling of children's blood lead levels by researchers from the National Children's Medical Center, the George Washington University Medical Center and the University of Virginia Health Sciences Center indicated that elevated blood lead levels are extremely rare among children outside of inner city locations where poorly maintained buildings or other old, dispersive uses of lead may still be a problem.

- A 1991 study by Industrial Economics, Inc. (which appears as Attachment 3), examined lead leachate values in post-RCRA landfills—that is, those opened after the disposal of industrial waste in municipal land-fills was prohibited—and showed them to be a small fraction of the level EPA's regulations would define as hazardous. EPA data indicate that lead in emissions from municipal combustors are, in the worst case situation, only 5 percent of the National Ambient Air Quality Standard for Lead.

- A newly published study by researchers from Dartmouth College, Yale University and the University of Pennsylvania finds that soil lead levels in north-eastern forests are declining sharply, yet not draining into streams. The best explanation of what is happening is that soil lead, which is relatively inert in any case, is being harmlessly immobilized in organic soil complexes in the forest floor.

The Subcommittee should note that after considerable study EPA has identified only five lead-containing products that may even potentially pose unreasonable risks: plumbing fittings, fishing weights, paints, and lead solder in plumbing and radiator repair. Of these, only plumbing fittings and the unlawful use of lead solder in plumbing relate to general public exposure.

With these points in mind, let me turn to the sections of the bill that concern us most.

FINDINGS AND POLICY

Section 401 sets forth a Congressional finding that certain health effects of lead may occur in children, and that such effects occur in adults "exposed to similar exposure levels." This is ambiguous and potentially quite misleading. We believe the most recent, February 1993 statement by a World Health Organization scientific task force makes it clear that effects of concern in adults occur only at levels much higher than those which in population-based studies have been statistically correlated with negative impacts on children.

The policy provision contains some language that loses focus on the issue of risk, and could be misinterpreted in a way that discourages the production of needed products, for example, the electric vehicle. Although the provision ends by stating that methods should be implemented to reduce sources of lead "that result in *adverse* human or environmental exposures," it begins by saying more generally that "releases of lead into the environment should be minimized."

While it would be reasonable to read the two phrases together, as an indication that the minimization policy applies only to sources that cause adverse consequences, we think it important that the language be clarified to avoid any suggestion that the two phrases are to be read separately. This could be misperceived as implying, for example, that Congress intended to discourage any releases of lead into the air—no matter how minimal and regardless of whether they meet protective limits set by regulation. Such a minimization policy would only serve to deprive

the country of valuable products with little or no offsetting benefit. To avoid confusion, the policy statement should be amended to make it clear that Congress' concern is with those releases that result in adverse human or environmental exposures. We have provided the staff suggested amendments to the bill that would accomplish this result.

THE NEW USE PROVISION

The Subcommittee has asked for our views on the new use provision of the bill. We have tried to make it clear that we do not object to reasonable review of new products that might pose a real threat to human health. Our problem with Section 404 of the bill is that, though supposedly addressed to new uses of lead, it would very likely operate to discourage the use of lead in existing products that are in fact safe and beneficial.

The provision would first require EPA to develop an inventory of existing "lead products." The bill is ambiguous as to what constitutes a "product" and it is predictable that this ambiguity will lead to disputes and probably litigation. Once that inventory is developed, anyone who begins to manufacture a "product" not on the list would have to notify EPA and provide certain information to the agency. While we do not oppose this part of the bill in concept, EPA is in the process of developing an inventory that we trust will be along sensible lines bearing in mind the purposes to be served, and there is no apparent need for additional legislation on the subject.

Our principal concern with the so-called "new use" provision is Section 404(b), which directs EPA to reach beyond new uses and develop a list of *existing* products that "may reasonably be anticipated to present an unreasonable risk of exposure." The provision might be justifiable if it were designed to alert the public to potential risks posed by use of particular lead products. However, the provision would allow EPA to place a product on the concern list because of any attenuated concern arising from any point in the process of producing lead or lead products or disposing of them. Furthermore, the bill allows anyone to petition EPA, with attendant publicity, to place a product on the list, and those who would like to see all uses of lead eliminated can be expected to argue that anything that results in more lead being mined, smelted or even recycled contributes unacceptable exposure risk and should be placed on the list.

To add to the problem, the provision would require a manufacturer whose product may have been placed on the concern list for reasons having nothing to do with prospective injury caused by the product itself to notify EPA of any increase in the product's lead content. Here again, the provision serves only to create burdens and costs for manufacturers with at best dubious health or environmental benefits.

While we believe subsection (b) should be deleted, if it were amended to make clear that it is designed to protect consumers, and were limited to products that potentially pose an unreasonable risk as a result of lead released during and from a noncommercial consumer's use of the product, we could find it acceptable.

THE BAN PROVISIONS

Section 403 would place extremely stringent limitations on and for all practical purposes ban the use of lead in a number of products. Other associations or groups will be expressing their concerns over some of these products, and I will not duplicate what they have to say.

The main point I want to make is that several of the products pose no human health or environmental risks of any consequence, and the list ought to be reviewed and culled with that point in mind. Moreover, the bans will operate prospectively to prohibit the use of lead in future applications that may on balance be highly beneficial. We are particularly concerned with four items, lead solder, packaging, lead chromate paints and curtain weights.

Lead Solder. The use of lead solder in plumbing systems was banned by Congress in amendments to the Safe Drinking Water Act which were enacted in order to reduce the leaching of lead into drinking water. In response to the Subcommittee's question on this subject, LIA agrees that the use of lead solder in plumbing applications should be terminated immediately—and, in fact, LIA has been on record for several years both in its agreement on this point and in attempting to work with EPA to devise better methods to enforce the prohibition on lead solder in plumbing. The bill's current approach, however, is overbroad and inappropriate.

In an effort to give teeth to the Safe Drinking Water Act's provisions, Section 403(d)(1) of the present bill would ban leaded solders "commonly used in plumbing systems," including two specific types of solder. The term "commonly used in plumbing systems" is not defined. In fact, of the two specifically identified grades of

"plumbing" solder, one (85:15) is not used for plumbing and the other is used for numerous applications besides plumbing. Banning the manufacture and sale of these solder grades would unnecessarily deprive non-plumbing users, which include the electronics and stained glass industries, of access to a useful and safe product. This result is not justified when there is a more precise way to limit plumbers' access to leaded solder, and paragraph (1) should be deleted.

The better way to achieve the intended result is to ban the sale of leaded solders in wholesale and retail plumbing outlets, an approach contemplated in Section 403 (d) (2), which also contains display and labeling requirements. This would prevent ready access to leaded solder at plumbing supply centers, and thereby increase the protection against misuse of lead-containing solder in a drinking water system. Two language changes are needed in Section 403 (d) (2), however.

First, the Administrator is directed to promulgate regulations that would apply to virtually all lead-containing solders. Four examples are provided of the types of regulations that are intended, but nothing limits the Administrator to the listed examples. This could result in far-ranging restrictions against leaded solder that have nothing to do with plumbing systems, and the Administrator's authority should be restricted accordingly.

The second necessary change would make it clear that the restrictions in subparagraph (2) (B) apply only to wholesale *plumbing* establishments, which is an issue because the word "plumbing" was omitted from this provision. Since all the other requirements in this subsection are specifically directed to plumbing outlets, the omission in (B) should be corrected to read the same way.

Also, the word "leaded" must be added to all the subparts of subparagraph (2), to make it clear that the restrictions apply to leaded solders and not all solders, as intended.

As a separate matter, the fact that solder is included in the product ban section of the bill places it at risk of being included in a "default" list of products of concern. This default list goes into effect under the new use section of the bill if the Administrator fails to compile a list of products of concern by the statutory deadline. Even though it is clear that the restriction on solders is aimed at the illegal use of leaded solders in plumbing, the phrasing is so broad that all leaded solders—including an array of valuable and safe products used in electronics and other applications—could end up being characterized as products of concern. One way to avoid this result is to recast the heading of § 403(d) more precisely, as "Lead Solder Used in Plumbing," instead of the current, loosely worded "Lead Solder." Another possibility would be to add an exemption for non-plumbing solders to the default list provision. LIA prefers the first proposal but, in any case, one of these alternatives should be adopted to guard against an unhelpful and unnecessarily harsh result.

Packaging. The Subcommittee has also asked for our views on the packaging provisions of the bill. Sections 403(F) and 402(15) adopt the so-called CONEG provision banning the use of lead in packaging, which has been adopted in varying ways and with various exceptions by a number of states on the theory that packaging that contains lead poses a substantial environmental risk when disposed in municipal solid waste. They did so on the basis of representations to this effect advanced at an earlier time by the Environmental Defense Fund. These representations have now been disproved. The Industrial Economics study I referred to earlier collects the data from EPA's and other studies of this issue and demonstrates that there is no substance to the earlier EDF contention. The packaging provision in its present form should be dropped. If there are specific packaging concerns, such as food contamination, we would be pleased to work with the Committee in formulating appropriate language.

That point aside, we are concerned that the definition of packaging in § 402(15) is written very broadly, and could include products that are used in industrial production and elsewhere and are never disposed in the municipal solid waste stream. Inasmuch as solid waste concerns have ostensibly—but erroneously—prompted this provision, if the provision is retained at all it would be appropriate to add limiting language to subparagraph 15 to make it clear that it applies only to any product "which is of a class of packaging that can reasonably be expected to enter the municipal solid waste stream" and to add an exception in § 402(b) for "pipes and tubing and other industrial vessels that do not enter the municipal solid waste stream." In this way there will be no confusion that could inhibit industrial processes that are regulated under other statutes and do not raise packaging issues.

Lead Chromate Paints. The treatment of lead chromate paints is another example of a product that involves little or no exposure of consequence. Lead chromate paints are used primarily in industrial applications and are in a chemical form that is not readily absorbed. For these reasons, they do not pose a significant human

health or ecological risk. Accordingly, the paint restrictions in the bill should be amended to exclude this type of paint.¹

Curtain Weights. Section 403(a)(2)(D) would ban all lead-containing curtain weights common in residential use that are not encased in vinyl. While the exception for curtain weights that have a protective vinyl coating is beneficial, other coating materials—such as plastic—are also used and offer the same advantages as vinyl. The exception should be extended to these types of coated curtain weights as well. Language has been provided to the staff that would accomplish this result.

PRODUCT LABELING

Section 405(d) contains a provision stating that compliance with the bill's labeling requirements would not constitute a defense against liability under any federal or state law. It seems likely that this provision was intended to avoid the implicit creation of a new defense or basis for mitigation under other federal or state laws. However, the language now sweeps so broadly that some might interpret it to override federal, state or common law provisions that consider compliance with federal requirements to be relevant to litigation under those laws. Another possibility is that this provision could be viewed as precluding consideration of the labeling information in any action under federal or state law regarding the adequacy of warnings given in the product. LIA has provided to the staff a proposed amendment that would prevent such possible misinterpretations.

SOILS

Finally, § 408(c) would require the Administrator to issue soil lead guidelines within two years of passage of the bill. EPA has an effort underway to issue such guidelines, and this provision of the bill is unnecessary. Also, the work that EPA is doing under Title X of the Housing and Community Development Act passed last Fall overlaps considerably, since that initiative involves identifying "lead-contaminated soil," an issue that is clearly related to the concerns highlighted in § 408(c) of the bill. We suggest that the provision should be eliminated.

CONCLUSION

While I have suggested ways in which S. 729 could be improved, we feel strongly that there is no justification for Congress's enacting legislation aimed at banning or restricting current or future uses of lead. The administrative process has produced a regulatory regime in which lead exposure from current activity is tightly controlled, and if there is need for further regulation, existing Federal law provides the various agencies ample authority to take action under generally applicable standards.

¹ In the event the chromate paint restrictions are retained, we believe the standard for exempting paints for lack of a substitute should be revised. As currently drafted, § 403(b)(5)(A)(ii)(II) would force substitution if there is a product that "does not pose a greater risk" than a lead-containing pigment. This formulation would require switching to a product that may present equal risk yet cost more. Such a result offers no health or environmental advantages, and the provision's standard should make it clear that substitution is required in the event there is a product that "poses a lesser risk."

ATTACHMENT 1

REGULATORY AND OTHER CONTROLS OVER THE DISPERSION OF LEAD INTO THE ENVIRONMENT

The following examines the actions taken to reduce lead exposure in the United States, and explains why new legislation is not needed to control the production, use and disposal of lead in order to protect human health or the environment.

I. THE USE AND DISPOSAL OF LEAD-CONTAINING PRODUCTS.

A. Product Use. The use of lead and lead compounds has been discontinued or greatly reduced in the four products that have been thought to pose excessive health risks. Thus, lead carbonate is no longer added to interior residential paint; the use of lead and lead solder in lines that carry potable water has been banned by Congress; U.S. food producers are phasing out the use of lead solder in food cans; and the tetraethyl lead content of gasoline is a small fraction of what it once was.

The Environmental Protection Agency estimates that the average blood lead level of the general population of U.S. children has declined from 17 micrograms per deciliter ($\mu\text{g}/\text{dl}$) a decade ago to 4-6 $\mu\text{g}/\text{dl}$ today, and is now well below the 10 $\mu\text{g}/\text{dl}$ level established by the Centers for Disease Control as the level of concern. EPA attributes the decline in U.S. children's blood lead levels to two of these developments—the reduction in the use of lead solder in food cans and lead compounds in gasoline. (56 Fed. Reg. at 22096 (May 13, 1991)). The decline in average blood lead levels will in all likelihood continue as the result of several factors, including the final phaseout of the use of lead solder in U.S.-manufactured food cans, and the reduction in drinking water lead content that will follow when the corrosivity treatment requirements of the new primary drinking water standard for lead are implemented.

A 1991 report estimates that exposure from the use of current lead products account for a small fraction of the 4-6 $\mu\text{g}/\text{dl}$ average blood lead level among U.S. children estimated by EPA. The report, by ENVIRON Corporation, estimates that such exposure contributes an insignificant amount, less than 0.1 $\mu\text{g}/\text{dl}$, to the average.¹ The Executive Summary of the report appears as Attachment 2.

B. Product Disposal. The so-called CONEG legislation enacted by a number of states bans the use of lead and other metals in packaging based on the premise that packaging containing lead poses a substantial risk when disposed in municipal combustors and landfills. In fact, that premise has been disproved.

An EPA report estimates that 80 percent of U.S. lead production is used for lead batteries,² while a study by Battery Council International, Inc., estimates that in 1991, 97.8 percent of the lead contained in scrap batteries was recycled. The lead that is used in many other products, such as cable sheathing and various construction materials, is also recycled, and the net result is that only a relatively small portion of lead produced in the United States finds its way into products that are discarded and introduced into the municipal solid waste stream. Furthermore, the lead in many of these products is bound in a matrix that limits potential leaching.³

The consequence of these and other factors that tend to limit the amount of lead in municipal solid waste landfills, or the leaching of lead from products that are discarded in those landfills, is that, as is shown in a 1991 report of Industrial Economics, Inc.,⁴ lead does not pose significant health risks in either municipal landfills or incinerators. The IEC MSW Report appears as Attachment 3.

1. Landfills. The IEC MSW Report analyzes existing data to determine the likelihood of lead leaching from landfills in concentrations that pose a threat to underground drinking water. The report concludes at page 1-2 that:

Analysis of the fate and transport of lead in municipal landfill leachate suggests a very low likelihood that nearby drinking water wells would ever contain lead concentrations in excess of the recently announced drinking water action level (0.015 mg/l).

¹ See "Assessment of Exposures to Lead," ENVIRON Corporation, August 2, 1991.

² ICF, "Use and Substitutes Analysis for Lead and Cadmium Products in Municipal Solid Waste" at 80 (June 8, 1990) (ICF Report).

³ See, e.g., Mitchener, "Lead Stabilized uTVC, Potable Pipe: Extraction Results Under NSF Standard 61," published by the Society of Plastics Engineers (ANTEC, Montreal, May 1991). Recyclability is a common feature in many of the emerging uses of lead, such as in radon shielding and molten lead energy cogeneration technologies.

⁴ "Potential Human Exposures from Lead in Municipal Solid Waste," Industrial Economics, Incorporated, May 21, 1991.

As the IEC MSW Report points out, this conclusion is confirmed by a report done for the Coalition on Resource Recovery and Environment (CORRE) by NUS, an EPA contractor. The CORRE study analyzed the leachate at a number of sites at which municipal incinerator ash was disposed alone or with other municipal waste. The data set forth in the CORRE report show that the concentrations of lead never exceeded $54 \mu\text{g/l}$. Thus, using EPA's $15 \mu\text{g/l}$ lead-in-drinking water action level as the basis for applying EPA's 100 times rule for determining the level at which waste is deemed hazardous, none of the tests exceeded four percent of the level EPA would consider hazardous.

The IEC MSW Report also examines the question of the effectiveness of municipal landfills as long-term sinks for lead in consumer products. Its conclusion on this issue is that (*id.* at 1-3):

Overall, landfills appear to be effective long-term sinks for lead. Our calculations show that for a typical landfill less than 0.001 percent of the lead in the municipal waste is expected to leach out in any given year. As a result, even after 10,000 years of leaching, in excess of 95 percent of the lead originally placed in the facility is still there.

2. *Municipal Incinerators.* The IEC MSW Report's analysis of exposures resulting from incineration of municipal solid waste involves three separate lines of inquiry. One is an evaluation of data on ambient air concentrations around municipal waste combustors in the U.S. and a comparison of those results with the National Ambient Air Quality Standard for lead. The second line of inquiry is a similar review of fugitive emissions around combustors and at ash disposal facilities which considers direct inhalation exposures as well as indirect exposures that might result from ingestion of contaminated soil or dust. Finally, the IEC MSW Report reviews information on the leachability of lead from incinerator ash.

The Report's ultimate conclusion on lead exposures associated with municipal incinerators is that they are well below the level of concern (*id.* at 1-3). More specifically:

- For stack emissions, EPA's own studies suggest that ambient air concentrations of lead in the worst case scenarios will be at levels that are less than five percent of the current lead NAAQS.
- Based on available data, fugitive emissions from incinerator ash handling and disposal practices also are not a major cause for concern.
- Analysis of ash monofill leachate data suggests that dilution and attenuation processes occurring during groundwater transport ensure that lead concentrations at nearby water supply wells are unlikely to exceed the drinking water action level.
- Air monitoring data around an ash monofill indicate that lead is not building up in the soil due to air deposition from disposal operations.

Thus, as is the case with the use of today's lead products, the disposal of those products in municipal solid waste does not pose a significant risk to human health.

II. THE PRODUCTION OF LEAD AND PRODUCTS CONTAINING LEAD

As the following will show, the production of lead and products containing lead is tightly regulated and does not pose health or environmental threats.

A. *Air Emissions.* Lead is subject to one of a very few National Ambient Air Quality Standards. As a consequence of actions taken by smelters in response to that standard, and the reductions in lead exposure affecting the general population, the blood lead levels of children who live near smelters have fallen along with national averages. EPA estimated in its February 1991 "Strategy for Reducing Lead Exposures" that in 1990 there were 800 children living near lead emissions sources with blood lead levels over $10 \mu\text{g/dl}$. Since then, MathTech, Inc., has estimated in a September 1992 report prepared for EPA that the number today is considerably lower than that.

Recent surveys by public health authorities of the blood lead levels of children living near primary and secondary lead smelters showed average blood lead levels at or near EPA's estimated national range of 4 or $6 \mu\text{g/dl}$, while few of the children had blood lead levels exceeding $10 \mu\text{g/dl}$. A 1991 public health survey at an East Helena, Montana, smelter found that the average blood lead level of children living near the smelter $4.75 \mu\text{g/dl}$, that blood lead levels were trending downward, and that only six percent of the children surveyed had blood lead levels over $10 \mu\text{g/dl}$. Blood lead testing in 1990 by public health authorities at a secondary lead smelter operated by Revere Smelting and Refining Corporation in Wallkill, New York, provided test results that were uniformly below the suggested range of concern. No

child under seven had a blood lead level higher than 9 $\mu\text{g}/\text{dl}$, and the arithmetic and geometric mean blood lead levels were between 5 and 7 $\mu\text{g}/\text{dl}$. Testing done contemporaneously by the New York State Department of Health and the Orange County Health Department confirmed that no child under seven had a blood lead level higher than 9 $\mu\text{g}/\text{dl}$.⁵

As for potential harm to the environment, it is true that some lead emitted to the air is deposited on the ground and can be washed into nearby water bodies. However, as pointed out in a 1991 report by McCulley, Frick & Gilman, Inc.,⁶ because "lead in most soils [is immobilized] by several mechanisms, including solubility controls and adsorption," the prospect that lead deposited on the land in this fashion will gravitate downward into underground water bodies is remote (Report at 2). There is also no evidence that air emissions that ultimately find their way into bodies of water pose a material ecological threat, or cause any significant increase above background levels of naturally-occurring lead. Furthermore, once in a water body, the McCulley report points out, the tendency of lead is to be incorporated into sediments through adsorption, thereby limiting its bioavailability (*id.* at 31).

A newly published study by researchers from Dartmouth College, Yale University and the University of Pennsylvania indicates that soil lead levels in northeastern forests are declining sharply, yet not draining into streams. The best explanation of what is happening is that soil lead, which is relatively inert in any case, is being harmlessly immobilized in organic soil complexes in the forest floor.⁷

These points are echoed in a draft report on lead risk reduction submitted by EPA to the OECD Environment Directorate in May 1991.⁸ The report notes that lead tends to be immobilized "in organic complexes or adsorbed to hydrous iron oxides" and this "immobility in soil tends to decrease [lead's] availability to humans and other terrestrial life" (*id.* at 49). (See also the discussion below on water quality.)

B. Disposal of Industrial Waste Containing Lead. EPA has adopted comprehensive regulations governing the disposal of industrial lead waste that are designed to ensure that public health and the environment are protected. Solid wastes generated by these production facilities are subject to hazardous waste treatment requirements under the Resource Conservation and Recovery Act, and EPA is in the process of developing regulations covering mine wastes. Effluent discharges and storm waters are regulated by technology-based discharge limitations under the Clean Water Act. Where these limitations do not meet state water quality standards aimed at protecting health and the environment, Section 304(1) of the Clean Water Act provides for the imposition of water quality-based limitations.

There is evidence that under this regime lead levels in rivers, streams and lakes have declined sharply, and the water bodies are not threatened by current waste disposal practices. The Fish and Wildlife Service, which has for many years monitored heavy metal content in fish taken from bodies of water nationwide, recently concluded: "Of greatest significance, lead concentrations declined steadily from 1976 to 1984, suggesting that regulatory measures have successfully reduced the influx of lead of the aquatic environmental."⁹ The report also noted that this finding "agrees with trends reported for U.S. river water, riverine sediments, and the atmosphere. . . ." (*Id.* at 740, citation omitted.)

C. Worker Exposure. Exposure to lead in the workplace is regulated by the Occupational Safety and Health Administration (29 C.F.R. § 1910.1025). Workers may not be exposed to lead above specified air concentration limits, and operators of facilities subject to OSHA's lead regulation are required to provide protection against such exposure through a hierarchy of engineering controls, work practices and res-

⁵ It is also of interest more generally that a recently conducted sampling of children's blood lead levels by researchers from the National Children's Medical Center, the George Washington University Medical Center and the University of Virginia Health Sciences Center indicated that elevated blood lead levels are extremely rare outside of inner city locations where poorly maintained buildings or other old, dispersive uses of lead may still be a problem. N. Rifai, G. Cohen, M. Wolf, L. Cohen, C. Faser, J. Savory, and L. DePalma, "Incidence of Lead Poisoning in Young Children from Inner-City, Suburban, and Rural Communities," *Therapeutic Drug Monitoring* 15:71-74 (1993).

⁶ Literature Review: Geochemical Fate and Transport of Anthropogenic Lead Released to the Soil Environment," August 7, 1991.

⁷ A. J. Friedland, B. W. Craig, E. K. Miller, G.T. Herrick, T. G. Siccama, A. H. Johnson, "Decreasing Lead Levels in the Forest Floor of the Northeastern U.S.A.," *Ambio* 21: 400-403 (1992).

⁸ EPA "Draft Report to the Chemicals Group and Management Committee of the Organisation for Economic Co-operation and Development Environment Directorate" (1991).

⁹ Schmitt and Brumbaugh, National Contaminant Biomonitoring program: Concentrations of Arsenic, Cadmium, Copper, Lead, Mercury, Selenium, and Zinc in U.S. Freshwater Fish, 1976-1984, 19 Arch. Environ. Contam. Toxicol. 731 (1990).

pirator use. In addition, the regulations impose a biological standard on facility owners requiring them to remove workers from significant lead exposure when their blood lead levels exceed a specified maximum. The standard makes special provision for protection from adverse reproductive effects.

[NOTE: Additional attachments to this statement have been retained in committee files.]

TESTIMONY OF ARTHUR M. HAWKINS ON BEHALF OF THE BATTERY COUNCIL INTERNATIONAL

Good morning. My name is Arthur M. Hawkins. I am President and Chief Executive Officer of the Exide Corporation, an integrated lead-acid battery manufacturer headquartered in Reading, Pennsylvania. Exide is the nation's largest manufacturer of lead batteries. I am also the President of the Battery Council International ("BCI"). I am pleased to appear today on behalf of BCI to express our views on S. 729, the Lead Exposure Reduction Act of 1993.

Mr. Chairman, it has been several years since BCI appeared before this Subcommittee. Therefore, I would like to provide some background on BCI. I will then express our views on S. 729.

At the outset, I want to make it very clear that BCI shares the legitimate concerns expressed here today regarding the potential public health risks posed by lead. BCI is fully committed to reducing exposure risks from lead. In this regard, BCI has aggressively promoted disposal bans and mandatory recycling laws that help eliminate potential exposure scenarios.

BACKGROUND ON BCI

With that introduction, I would now like to provide a brief background on BCI and then return to a discussion of S. 729.

BCI has over 250 members worldwide. Each member is involved in some phase of lead battery manufacturing, supply, distribution, or recycling. Domestically, our membership accounts for approximately 99 percent of the nation's lead battery manufacturing capacity and approximately 85 percent of its battery recycling capacity. Our members also include battery retailers in every state, as well as battery distribution centers located in each region of the country.

In 1992, our domestic membership manufactured over 84 million lead-acid batteries for sale in the United States and overseas. The lead batteries we manufacture are most commonly thought of as the starting, lighting and ignition batteries in automobiles and other vehicles. This is only part of the story, however. Lead-acid batteries also power wheelchairs and are used in a broad range of applications from computers and communication systems to nuclear submarines and missiles. In these applications, lead batteries provide emergency or standby power and perform critical load-leveling functions. Lead-acid batteries also are used in a wide variety of rechargeable household appliances and numerous industrial applications.

Manufacturers of lead batteries are only one interest represented by BCI. Our members also *recycle* lead batteries. Based on the most current data available, over 96 percent of the lead used in the manufacture of lead batteries is recycled. This high recycling rate is a direct result of our industry's efforts to promote battery recycling. In fact, for every year since 1987—the year state battery recycling laws first became effective—the recycling rate for lead-acid batteries has been over 90 percent. These high recycling rates occurred notwithstanding the lead price fluctuations during these periods. See attached chart.

The recent significant decline in lead prices has had a negligible effect on recycling rates. BCI attributes this to the mandatory recycling laws in place in forty-two (42) states, in which approximately 87 percent of the nation's population resides. These mandatory state recycling laws are based substantially on model legislation promoted by BCI. That legislation bans the disposal and incineration of lead batteries and mandates their return for recycling through a reverse distribution system.

COMMENTS ON S. 729

Let me now turn to the issue at hand—S. 729, the Lead Exposure Reduction Act. We are pleased that Section 406 of S. 729 incorporates much of the BCI model recycling legislation. Our experience has shown that if retailers readily take back used batteries, and consumers are aware of these take-back opportunities, consumers will voluntarily trade in their used batteries and the batteries will be recycled.

BCI therefore believes that a federal battery recycling law should be built on a consumer trade-in approach. It should mandate movement of the returned batteries

through the original product distribution system, in reverse or through other acceptable recycling channels. Section 406 adopts this approach to recycling. BCI supports it.

However, we also believe several improvements could be made to S. 729. If adopted, these will further ensure that lead acid batteries are returned for recycling.

First, we note that as currently drafted Section 406 does not prohibit states from adopting or enforcing battery recycling requirements that are inconsistent with federal law. This addition needs to be made.

Battery manufacture and distribution is a classic example of interstate commerce. Lead batteries are produced and distributed on a national and regional basis. They are not manufactured for sale in a specific state. When different states impose different requirements—even seemingly innocuous differences, such as product labeling obligations—significant and unnecessary costs are imposed on the battery manufacturing industry. Indeed, significant and unnecessary costs often are incurred in just trying to maintain some level of consistency between the states. For this reason, we recommend the inclusion of a provision to prohibit states from adopting or enforcing inconsistent regulations.

Second, we recommend the addition of a national \$10 deposit in lieu of trade-in provision on automotive type batteries in Section 406(f). Such a provision would require retailers to collect a \$10 deposit on the sale of any replacement battery not accompanied by the return of a used lead-acid battery. The deposits would inure to the benefit of the retailer unless the customer returned a used lead battery within 30 days of the date of sale.

It has been our experience that when deposit requirements are combined with the other provisions of Section 406, consumers have a strong incentive to participate in the recycling program. EPA reached a similar conclusion in its lead battery regulatory negotiations in 1991. After an exhaustive analysis of lead-acid battery recycling, EPA concluded that the BCI model combined with deposit requirements provided the greatest increase in lead battery recycling rates.

Third, we recommend a provision in Section 406 that would prohibit states from requiring the SPI plastic resin identification code on plastic battery cases. Although only a few states now require battery cases to be labeled with the SPI code—because batteries meet the definition of rigid plastic container—our members may have to incur substantial expense to develop battery case molds with the appropriate SPI designation. This is because most battery manufacturers produce many different sizes of batteries, some up to 90 different size groups.

Moreover, virtually all automotive, marine and industrial batteries are now voluntarily labeled with the BCI recycling logo, which consists of the three chasing arrows and the words "LEAD/RETURN/RECYCLE." This label clearly is more conspicuous than the SPI code and is more than adequate to effectively promote the recycling of lead batteries and their plastic cases. After all, battery cases are an integral component of a lead-acid battery. In virtually every instance where batteries are recycled, the battery cases are recycled as well. Once recycled, the plastic from these battery cases is used in the manufacture of new battery cases and vent caps.

Fourth, the labeling exemption provided to lead-acid batteries in Section 405 should be eliminated. Section 405 would establish certain labeling requirements for products identified on the exposure concern list pursuant to Section 404(b). As currently drafted, we are concerned that the exemption in Section 405 could be read to require the listing of lead batteries under Section 404(b) regardless of a determination that they may not reasonably be anticipated to present an unreasonable risk to human health or the environment. Because EPA has not identified the lead products that will be listed under Section 404(b)—and we do not expect batteries to be so identified—we think it premature to provide an exemption for lead batteries from the labeling requirement. That should never apply.

Before concluding, Mr. Chairman, I would like to direct a few comments to the issue of management standards for used lead acid batteries. Lead batteries are the nation's most recycled commodity. As I mentioned earlier, in 1991, 96.8 percent of all lead in batteries available for recycling was recycled.

Long before any Resource Conservation and Recovery Act ("RCRA") controls were imposed, lead batteries were being reclaimed through a mature, market driven, reverse distribution system in which lead batteries moved from consumers to retailers, wholesalers, manufacturers and ultimately to secondary smelters for recycling. The existing regulations (40 C.F.R. Part 266.80, Subpart G) reflect a conscious and correct decision on the part of EPA to allow the reverse distribution system to operate.

In fact, when adopting the current regulations EPA considered the following criteria:

- Spent batteries are a valuable commodity and are reclaimed;
- Acid spillage is unlikely due to Department of Transportation requirements under 49 C.F.R. Part 122;
- Battery recyclers typically pay for spent batteries on a weight basis, helping to ensure that batteries arrive at the recycling facility intact; and
- Storage of spent batteries by retailers, wholesalers or service stations is likely to be properly managed because they rely heavily on good consumer public relations. *See* 48 Fed. Reg. 14498-99 (Apr. 4, 1983)

Nothing has changed to warrant the consideration of management standards for lead batteries. Indeed, the most significant change since the adoption of 40 C.F.R. Part 266.80, Subpart G, has been the proliferation of state battery recycling laws covering over 87 percent of the population. These statutes mandate battery recycling through the same approach used in the BCI model and being considered here. This approach has proven effective and should be allowed to operate.

Finally, Mr. Chairman, allow me to make one additional point with regard to the issue of lead taxes to finance lead paint abatement programs. BCI is strongly opposed to the imposition of a tax on lead. I want to emphasize that lead batteries cannot be made without lead and almost 80 percent of the lead used in domestic manufacturing today is used to manufacture lead-acid batteries. A tax on lead, therefore, is a tax on batteries.

A tax on lead is inequitable, would result in a substantial increase in the cost of producing lead-acid batteries, and will have severe adverse impacts on the ability of lead-acid battery manufacturers to compete, both in existing markets and in developing advanced technology markets, such as electric vehicles.

There is absolutely no justification for this proposed approach to the lead paint abatement problem. There is no rational basis for making lead-acid batteries the primary financial source for correcting problems created from past, and now discontinued, uses of lead. Indeed, the lead used in lead-acid batteries is not even the same as the lead used in lead paint.

With that Mr. Chairman and Members of the Subcommittee, I thank you for the opportunity to appear before you today. I would be pleased to answer any questions you may have.

LEAD PRICES

YEAR	RECYCLING RATE	AVERAGE PRICE	
		<u>LME*</u>	<u>N.A. PRODUCERS**</u>
1987	88.6%	26.99	35.9
1988	91.0%	29.7	37.1
1989	95.3%	30.6	39.4
1990	97.8%	37.05	46
1991	96.8%	25.3	33.5

* LME = London Metal Exchange

** N.A. Producer = North American Primary Producer Mean

STATEMENT OF GARY SHAPIRO, GROUP VICE PRESIDENT, ELECTRONIC INDUSTRIES ASSOCIATION

Mr. Chairman, I am Gary Shapiro, Group Vice President of the Electronic Industries Association (EIA). I am appearing today on behalf of my Association and the Ad Hoc Electronics Coalition on Lead (the Coalition). The Coalition is comprised of trade associations and companies which utilize lead in a variety of electronics, electrical and high technology applications. Coalition members include AT&T, Coming, Inc., Digital Equipment Corporation, General Electric Company, GTE, Hewlett-Packard Company, IBM Corporation, Litton Industries, Motorola Inc., Philips Corporation of North America, OI-NEG Television Products, Inc., Thomson Consumer Electronics, and Texas Instruments.

Also participating in the Coalition are EIA and two other trade associations, the American Electronics Association and the American Amusement Machine Association, which together represent over 3,000 electronics and electrical equipment manufacturers nationwide. Members of the Coalition manufacture a wide range of products, including computer-related electronics components and assemblies, consumer electronics, lighting products, sophisticated glassware products used in electronics applications, products utilized in the aerospace industry, and medical equipment.

The Ad Hoc Electronics Coalition supports the goals of S. 729 and endorses the structure and intent of the legislation. The electronics industry recognizes that certain types of lead uses can pose unacceptable public health concerns. In particular, we share the Senate's deep concern for controlling those uses of lead that present the ranges of direct human exposure to unhealthful concentrations of lead.

Although we recognize the need to regulate certain high exposure uses of lead, the electronics industry has been very concerned that any legislative initiative on this issue must not restrict the availability of lead for use in the electronics and electrical industry. Lead's unique electrical properties make it a critically-important material in a wide variety of electronics and electrical applications. At the same time that lead serves an essential material in our industry, these vitally important uses of lead present little or no exposure concerns. Consumers and other individuals who use electronics products, for example, are not exposed to lead from our products. Likewise, the presence of leaded glass in computer or TV monitors does not pose a risk, nor does the use of lead solders as electrical connectors in printed circuit boards. Worker exposure to lead also is not an issue for our industry, because workplace exposure levels are already limited and controlled by the Occupational Safety and Health Administration (OSHA).

Because lead plays such a key role in the electronics and electrical industry, we have been actively involved in the legislative debate on the lead bill over the last two years. Indeed, the Coalition actively opposed previous formulations of lead legislation which treated all lead uses as though they posed public health risks, which subjected new uses of lead to a premanufacture review at the Environmental Protection Agency, and which prescribed that virtually all products containing lead be accompanied by a "warning" label, regardless of the exposure potential for the lead in the product.

These earlier legislative initiatives posed a serious threat to the continued availability and use of lead in our industry, despite the low risks associated with our lead use. They also threatened to disrupt innovation in our rapidly changing industry by subjecting our industry's new products to pre-manufacture review, again without any risk-related justification. The prospect of delaying the introduction of new lead-containing products in our highly-competitive industry was simply unacceptable.

Because of our interest in playing a constructive role on this important issue, however, we continued to work closely with Congress, industry, EPA, and environmental groups over the past two years to help fashion a legislative package which addresses the very real public health concerns associated with direct exposure to high levels of lead, without unjustifiably regulating lower risk lead uses. That process led to an agreement with the Environmental Defense Fund to develop a new regulatory approach that focuses on high-risk, high-exposure uses of lead, to remove pre-manufacture review of any new products, but to provide notice and labeling for certain higher-risk lead uses. The agreement was embodied in the legislation that was reported out of the House Energy and Commerce Committee last year.

We have continued to work on these issues with Senator Reid and his staff, and we are pleased that S. 729 has incorporated many of the understandings that we previously had made with the Environmental Defense Fund. As explained below, we have some concerns about implementation issues, and about a few remaining ambiguities in the legislative language. We have discussed those issues below, in the

hope that they might be addressed through adjustments in language, or through a clarification in the Committee's Report on the Bill.

Finally, I have discussed in some detail below the types of uses of lead in the electronics and electrical industry in order to provide the Committee with additional detail regarding the importance of lead to our industry.

I. Specific Issues

A. Section 403

From the Coalition's perspective, the key aspects of S. 729 that are of primary interest include Sections 103, 104 and 105, which propose to add new Sections 403, 404 and 405 to the Toxic Substances Control Act.

Section 403 would restrict continued use of specified lead-containing products. Most of the uses identified do not impact the electronics industry and, as a result, our Coalition is not well-equipped to comment on their appropriateness. Two categories of uses, however, deserve special mention.

First, certain toys and recreational game pieces containing more than 0.1 percent lead by dry weight are banned, except when such items include electronic or electrical parts or components that meet Consumer Product Safety Commission requirements. The Coalition agrees with this approach. Electronic or electrical parts of toys typically do not involve exposure concerns and, in any event, they are regulated by the CPSC. As such, they provide an excellent example of items that do not pose special, unregulated risks that need attention under the legislation.

Second, Section 403(d) proposes to ban certain lead solders "commonly used in plumbing systems," and to restrict the availability of other lead solders that might be misused in plumbing applications. The Ad Hoc Electronics Coalition also does not object to banning the use of leaded solders in drinking water systems because of the obvious exposure risks created by such uses. The Coalition is concerned, however, that an approach that bans solders "commonly used in plumbing systems" might be interpreted in an over-broad manner that takes dual-use solders used in electronics and electrical applications off the market. Likewise, the provisions dealing with the prohibition on the sale or display of non-plumbing solders might be misinterpreted in a manner that restricts access to non-plumbing solders used in electronics manufacturing operations.

The Coalition is confident that these unintended results can be corrected by daring the language of proposed Section 403 (d), and by providing an additional explanation in the legislative history. Concerns about the availability and use of leaded solders in plumbing applications should not, and need not, impact the availability of leaded solders for industrial applications in the electronics industry.

B. Sections 404/405

The proposed Section 404 is the central provision of interest to the electronics and electrical industry. It calls upon EPA to create an Inventory of lead-containing products, and to cull out from the Inventory those uses of lead that pose special exposure concerns. Lead uses that fall within these high risk categories are then subject to labeling under Section 405 and, under Section 404, notices must be provided to EPA when new products which fall in such high risk categories, and which use more lead than similar products, are manufactured for the first time. Such notices are not "pre-manufacture" notices involving prior EPA review and approval. The notices are provided coincident to initial manufacturing; they enable EPA to track new product developments, to evaluate the potential regulation of such products, and to report to Congress whether new lead-containing products posing exposure risks are being introduced into the marketplace.

The Coalition helped to develop this provision, and it endorses the risk-based approach upon which it is based. If EPA administers the provision in a straight-forward manner that targets those lead uses that pose significant exposure risks, based on documented data, the provision has the potential to direct the Agency's limited resources toward those lead uses that pose actual risks. Also, if administered correctly, the Agency will not be devoting attention under this provision to those lead uses that do not pose high exposure risks, such as the use of lead in the electronics and electrical industry.

In order to ensure that this intended result is achieved, the Coalition proposes that the Committee clearly state its intent that only lead uses that pose documented, actual risks based on normal use patterns (and not on speculative, "worst case" scenarios) be singled out for special attention in a high risk category. If the Agency instead takes an over-broad approach to interpreting this language, and sweeps into the regulatory net those lead uses that pose insignificant exposure risks, such as our companies' products, the new regulatory program will fail.

It likewise is very important that S. 729's use of a simultaneous notification approach to identifying high risk new products which contain unprecedented high levels of lead be retained in favor of a pre-manufacture notice and approval approach. The focus of attention on lead-containing product should be on currently-existing products that are creating exposure concerns. This is not a "new product" problem; it is primarily an "old" product exposure issue. Moreover, if and when any new lead-containing products posing special concerns are introduced into the marketplace, the simple notice approach taken in S. 729 will enable EPA to take action under the Toxic Substances Control Act as required.

II. Use of Lead in the Electronics and Electrical Industry

In order to assist the Committee in better understanding the special interest of the electronics and electrical industry in ensuring that its uses of lead are not limited by well-intentioned, but over-broad, legislative or regulatory initiatives, I am including with this testimony a review of several of the major uses of lead in our industry. Although this information is illustrative and does not document all lead uses, it demonstrates that the benefits associated with electronics applications of lead, and the costs associated with limiting the availability of lead for such uses, far outweigh any risks created by such specialized uses of lead.

A. Lead-Containing Solders In Electronics And Electrical Components

1. Overview

The electronics industry relies on lead-based solders to form critically important electrical connections in a wide variety of high-technology products, including printed circuit boards, semiconductors, and sophisticated switching equipment. Solders utilized in these applications must be able to simultaneously satisfy several difficult performance parameters. Lead is unique in its ability to meet these key performance requirements reliably in mass production applications.

Some of the high technology industry's performance requirements are dictated by unique manufacturing demands. Specifically, electronics components typically are manufactured on a "micro" scale, with components often having hundreds, or even thousands, of electrical connections within a single device (e.g., a printed circuit board). The materials that are used to make such connections must have precise performance characteristics that enable them to be manipulated with precision and absolute predictability during the "micro" manufacturing process.

In addition, after the challenges of the manufacturing process have been met, the electronics equipment must function with the utmost reliability. Achievement of this high level of performance requires that the materials utilized to make electrical connections be capable of functioning under a variety of conditions without "shorting" or other failures. For example, electronics and electrical components have a number of sophisticated military applications that demand superior performance characteristics in extreme temperature and other adverse environmental conditions. Military specifications for such products recognize that lead is often the only material capable of achieving such performance and thus mandate its use.

In this context, it should be noted that certain specialized uses of lead in electronics applications require virgin lead to maintain reliability. Virgin lead is required, for example, because many other varieties of lead emit alpha particles that can erase computer memories. As a result, only virgin lead can be used in certain types of computer equipment.

Over the years, the electronics industry has experimented with a number of materials for use in electronic soldering. For example, a tin-lead blend that is comprised of 63% tin and 37% lead is one of the compositions which has the unique properties that satisfy the manufacturing and performance challenges discussed above. Various other tin-lead alloys are selected depending on the conditions in particular applications, and other lead-based solder alloys have been found to provide specialized performance characteristics needed in certain applications. To provide additional details regarding these important points, the discussion below focuses on the unique manufacturing and performance capabilities of tin-lead solder alloys.

2. Lead Solder Use In Manufacturing Processes

Tin-lead solders become available for application to electronics components within a uniquely-limited temperature range that enables manufacturers to manipulate application of the solders. Specifically, the "wetting" of such solders occurs across a narrow band of temperature ranges that can be controlled during the manufacturing process, thereby ensuring that the solders are pliant only at the appropriate temperature. Lead-based alloys with successive temperature "wetting" ranges are used for the sophisticated "layering" of electronics components and connections.

Alloys containing different tin-lead ratios will have different melting temperatures. As a result, a different array of lead-based alloys can be used in sequential manufacturing processes that involve the "layering" of components. This is because each layer containing a unique tin-lead ratio, and hence a unique melting point) can be "wetted" without melting or otherwise disturbing previously applied layers. Layering is particularly important in high-end electronics applications, including the manufacture of semiconductors.

There is a well-defined temperature at which tin-lead liquid solders liquify and "freeze" into position. This well-defined temperature (the point of "eutectic transformation") provides manufacturers with needed flexibility in working with lead solders during the manufacturing process, at the same time that it ensures that solders will remain "frozen" in place under a variety of performance conditions. See generally H. Manko, *Solders and Soldering* (2nd ed. 1979). Rapid cooling prevents movement of the solder and components during solidification. Slow solidification can cause disturbed joints.

3. Lead Solder Performance Characteristics.

Lead-based solders continue to perform electrical connection functions reliably under a wide range of temperature conditions. They also form unusually strong bonds that are resistant to metal fatigue.

Potential substitutes do not share these important performance characteristics. Research on metal-filled epoxies has been intense and is ongoing, but such epoxies have characteristics that limit their availability as substitutes for lead solders. For example, metal-filled epoxies can be used for some types of electronic connections, but they typically are inappropriate for applications that demand long service life, or for applications that will be subjected to varying temperature ranges. Epoxy compounds are much more likely to fail, particularly if subjected to high temperatures. Further, such failures are virtually unrepairable, especially when they occur in aerospace, missile electronics or computer-related equipment.

Similarly, when tin alone is used as a soldering medium in electroplating baths, tin cannot be relied upon to maintain needed performance characteristics at all temperature ranges. At colder temperatures, tin becomes brittle and breaks; at higher temperatures, it grows metal follicles ("whiskers") that can cause short circuits.

Fatigue is also an important area in which lead-based solders have clearly superior performance characteristics. Tin-gold, tin-silver and tin-zinc solders, for example, tend to be brittle, and cannot be relied upon for long service. Similarly, tin-bismuth solders have rapid oxidation, low creep strength and relatively short product lives, often no more than four to six years.

B. Lead Usage in Glass Products

1. Cathode-Ray Tubes

Cathode ray tubes (CRTs) play a key role in a variety of electronics applications, including computer products (e.g., computer display screens), consumer electronics (e.g., television screens), and military applications (e.g., radar screens). Lead is utilized in the manufacture of CRTs for two principal reasons. First, because of lead's unique density, it serves a "shielding" function to protect CRT users from radiation. Second, lead is an important component in CRT flare tubing, in which glass to metal sealing plays a critical role.

- **Shielding**—Lead is blended into CRT glass in order to satisfy the legal requirement that users be shielded from potentially harmful X-rays. See 21 C.F.R. Parts 884 & 892 (HHS and CPSC regulations mandating the use of lead for shielding purposes). Lead is utilized, in particular, in the funnel portion of CRT tubes, which is manufactured with relatively thin glass, and for which additional shielding is required. Likewise, lead plays an important shielding function in the "neck" portion of CRTs, in which the glass is even thinner, and more shielding is required. Lead is utilized for this shielding purpose because it is an extraordinarily dense material that is able to effectively block radiation emissions. Lead is significantly more effective for X-ray shielding than potential substitutes (e.g., barium). In addition, other potential substitutes present toxicity concerns (e.g., osmium tetroxide and thallium).
- **Metal/Glass and Glass/Glass Bonding**—Lead also plays an important, specialized role in creating the glass-to-metal seals that are utilized in the "gun" portion of a CRT. More specifically, lead is an important component in the glass that separates the wires which conduct the electricity utilized to "light" a CRT. Lead is needed in the glass in order to control the expansion of glass during the

formation and usage of the glass/metal seal. At the same time that lead serves this important function, it prevents electrical shorts through a mixed ion effect which prevents the migration of current between the wires.

Lead also is utilized in the so-called "lead solder glass" (also known as a "frit") which is used to join the front glass panel with the glass funnel in CRTs. Lead is needed for this highly specialized glass-to-glass seal for both its shielding and bonding characteristics. No lead substitute has been identified which is available to satisfy both of these performance requirements.

2. Lighting Products

Lead is an important component in certain lighting products, where it is utilized in some of the same types of applications as described above for CRTs.

- *Tubing*—As explained above, lead is blended into the glass that is utilized to separate wires in the "gun" portion of CRTs. Lead plays the same vital role in the glass that is utilized in the formation of "flare tubing" at the base of light bulbs. Just as in a CRT, the temperature sensitivity of the lead in the glass enables the glass to be formed around the wires in air-tight seals, at the same time that it prevents the migration of an electric current through the glass. Neon signs, for example, consist almost entirely of glass tubing. The lead in the tubing provides the workability range necessary to shape the glass into letters and other symbols.

In contrast, lead normally is *not* blended into the glass that forms the "globe" portion of most incandescent lamps: nor is it used in the outer glass of fluorescent lamps. Lead is not typically used in this type of glass because the special performance characteristics associated with lead, including lead's unique formation properties, are not needed in the absence of a glass-to-metal seal.

- *Lead Use for Electrical Contact*—Lead also is utilized in lighting products as the solder connection that permanently joins the nickel/manganese wire to the brass eyelet on the lamp base, and lead solder is melted into a smooth convex mound to provide a safe positive surface contact in a lamp socket.

The electrical industry has not been able to identify an effective substitute for the small, but important, uses of lead in lighting fixtures. Potential substitutes (e.g., silver, antimony) typically have much higher melting temperatures than lead. As a result, the heat required to apply such materials can crack the base glass insulation. When cracked, safety and performance of the lamps are compromised. In addition, high temperature solders tend to create lumpy point contacts, leading to base arcing problems.

Alternatives to soldering, such as welding or crimping, also have not proven to be safe or reliable. Internal welds (under the base) cannot be engineered using current manufacturing equipment: external welds leave sharp point contacts which are easily broken when the lamp is handled or screwed into a socket.

C. Lead Usage In Electronics-Related Ceramic

Lead is an important component in ceramic materials that are utilized in highly-specialized electronics products. So-called "piezoelectric" materials (or PZTs) and electrostrictive materials (or PMN) are used in sonar equipment, radar technologies, deformable mirrors in satellites, computer printer heads, telephones and over a wide variety of other applications that convert sound waves into electrical signals. Many of the applications of PZTs are for sophisticated military applications, and military specifications typically mandate a particular lead content in PZT materials because of lead's dependability and performance characteristics.

D. Lead Usage in Sheathing And Insulation

Lead is a small (i.e., 3% or less), but important, component in polyvinyl chloride (PVC) sheathing which is commonly used as a coating for electrical wiring. Lead serves as an insulator and stabilizer and, as such, it serves important protective function by minimizing the potential for electrical interference, electrical shock, electrical shorts, and the like. Lead also was traditionally used to shield large cables utilized by electrical utilities and telephone providers that use large cables for electrical transmissions. Much of this lead use, however, has now been replaced by plastic based cable sheathing.

E. Lead Shielding in Medical Products

Lead performs an important shielding function for a large number of electronics-related medical products. As explained above, lead's density makes it well-suited to act as a barrier to X-rays and, as a result, it is utilized in virtually all medical and research equipment that uses X-rays, including X-ray machines, electron micro-

scopes, and the like. As described in the context of CRTs, there are no practical substitutes that duplicate the shielding properties of lead. Barium is less effective, and other potential substitutes (osmium tetroxide or thallium) are highly toxic.

F. Lead Usage in Aerospace Manufacturing

Lead's unique properties are utilized in aerospace applications including, in particular, in the highly-specialized manufacture of turbines used in jet propulsion engines. Lead plays an important role in two distinct steps of the turbine manufacturing process. It is utilized in the forging process and, after forging has been completed, as a matrix material.

1. *Use in the Forging Process*

Jet engine turbine blades are formed through a series of hot-forging operations. For each such operation, the metal alloy from which the blade will be made is coated with a lubricant, heated to a very high temperature, and pressed into aerodynamic shape in a die.

Aircraft engine manufacturers utilize lead as the specialized lubricant/coating material in the high temperature turbine blade forging process. Lead has been found to be uniquely suited to this function because the malleable lead fills imperfections in the die surface, thereby avoiding the formation of fractures or other imperfections in the blades. Because fractures can create weak spots in turbine blades and, potentially, lead to blade failures, this performance characteristic is particularly important. Lead also serves as an effective lubricator in these circumstances; even at high temperatures, it enables the metal alloy to flow effectively in the die for forging.

Substitutes for this unique application of lead have not been discovered. Other materials appear to be suitable for low temperature forging operations, but only lead serves adequately for high temperature forging, and for the final forging step in low temperature operations.

2. *Use As A Matrix Material*

After a turbine blade has been made, a lead-based alloy is cast around the blade in order to contain, protect, and facilitate the handling of the blade. Lead has been found to be ideal for this "matrix" function because it enables the carefully-formed blade to be firmly held, without adversely impacting the integrity of the blade. Virtually all of the lead used as a matrix material is recycled. None of the lead is actually utilized in the turbine blade itself.

3. *Part of Military Specifications*

Many aerospace products that contain lead are used in defense-related activities, and therefore are produced according to Department of Defense (DoD) specifications. For instance, DoD specifies that certain paints, coatings, finishes, enamels, solder, and plating must contain lead. Since much of this high-technology equipment is used during adverse weather conditions, and at times when durability and reliability of the equipment is of extreme importance, DoD may have difficulty in revising its military specifications on lead content.

G. Additional Electronics-Related Lead Applications

The lead uses detailed above provide an overview of a number of critically-important uses of lead in the electronics, electrical and high technology industries. In addition to the uses described above, there are a large number of other specialized applications of lead in electronics-related manufacturing activities, and in electronics and electrical products. For example, lead selenide and other lead compounds are used as infrared detectors in military tracking and temperature sensor applications. In addition, frits containing lead serve as conductors in ceramic circuitry. The diversity in the nature and scope of lead usage in the electronics industry underscores the inappropriateness of making sweeping generalizations about such uses. Each lead use must be evaluated on its own merits. Undertaking that exercise, as has been done here, convincingly demonstrates that lead plays a key role in a number of important applications in the electronics and electrical industry.

IV. Conclusion

On behalf of the Coalition, I would like to again express my appreciation for the opportunity to testify on the S. 729, the Lead Exposure Reduction Act. As my testimony has indicated, the electronics and electrical industry understands and respects the toxicity concerns associated with lead exposures. At the same time, lead can and is being used in our industry in critically important applications in a safe manner

that should not be subject to new regulatory requirements. S. 729 attempts to balance these important interests by developing a risk-based approach to regulating lead-containing products. We applaud the Committee's efforts to develop this balanced approach, and we look forward to continuing to work with the Committee to further refine the legislation.

TESTIMONY BY BILL WILSON REPRESENTING PBADCO AND THE AMERICAN FISHING TACKLE MANUFACTURERS ASSOCIATION

Mr. Chairman, I appear before the Committee today representing PRADCO of Ft. Smith, Arkansas, where I am Chief Executive Officer, and the other member companies of the American Fishing Tackle Manufacturers Association (AFTMA). PRADCO is the world's largest manufacturer of recreational fishing lures according to industry statistics. With me is Mike Nussman, AFTMA's Vice President for Governmental Affairs.

Regrettably, we are here to express our strong opposition to the provisions of S. 729, the "Lead Exposure Reduction Act of 1993" that affects fishing tackle. These provisions would ban the sale of all fishing weights, jigs, and lures containing lead two years after enactment of the bill. We believe the provisions are unnecessary, and will, if signed into law, result in the loss of thousands of jobs in our industry. Further, enactment of these provisions would have little, if any, positive effect on the environment.

Mr. Chairman, we would like to focus our comments on three topics today. First, we would like to describe our industry and why we are compelled to oppose this bill. Second, we would like to update the subcommittee on what the fishing tackle industry has learned regarding lead since the last time we testified before this committee three years ago. And third, we would like to review the Environmental Protection Agency's recent action regarding certain lead fishing sinkers.

Industry Review. There are 60 million anglers in this country who generate nearly \$30 billion in economic activity annually pursuing their sport. After swimming and walking/jogging, fishing is America's most popular outdoor recreation. We in the tackle manufacturing industry rely on healthy, abundant fish stocks, and strong public confidence in the health and safety of the fish they catch and consume.

Our industry, which provides the Nation's anglers with the equipment they use and enjoy, is very much a labor-intensive, cottage industry. While we do have some fairly large companies which specialize in fishing tackle, the majority of tackle manufacturers employ less than 150 people. Most of these are small, family-owned businesses that serve local and regional markets. Unfortunately, it is these very companies that would be put out of business if this bill passes in its current form.

Many of these manufacturers use lead in varying degrees to produce fishing tackle products, particularly sinkers and lures. Lead has many characteristics that are advantageous to both anglers and manufacturers. Its physical properties of density, softness, and low melting point, as well as its low cost make lead the ideal choice for almost any type of sinker or lure. Unfortunately, there is no simple answer in the search for a substitute material. Let me give you an example of what I mean. Lead is a very dense substance, weighing 707 pounds per cubic foot while potential substitute materials such as zinc or cast iron weigh 440 and 450 pounds, respectively, per cubic foot. To acquire the desired weight to provide proper ballast for a fishing lure, the ballast pellets would have to be nearly twice their current size. This, in turn, would cause nearly eighty percent of our lure manufacturers to retool to change the shape and size of lure bodies. Retooling for injection molding would cost from \$5,000 per mold up to \$30,000. Most lure manufacturers will have dozens of molds which would require modification. For an industry historically burdened with low profit margins, the capital simply is not available to make these changes.

Additionally, changing the size and shape of lures would clearly alter their performance. Years of research and development costing millions of dollars would be required to redevelop satisfactory products. And, in many cases, it simply could not be done. That is one example of the impact of replacing the use of lead in our industry.

In addition to affecting manufacturers, S. 729 would impact the fishing tackle distribution system. Products from our industry flow through a network of buyers and distributors before reaching retail outlets and our consumers. For example, our manufacturers are currently starting the production phase for products that will not reach the consumer market until the winter of 1995. What that means, of

course, is that if this bill were enacted today, the entire distribution system would be clogged with products which could not be legally sold during the summer of 1995. This, alone, would leave major retail outlets such as K-Mart and Wal-Mart, and some 9,000 specialty fishing tackle supply stores around the country, as well as key mail-order suppliers like Cabela's, Bass Pro Shops, Orvis, and L.L. Bean, with millions of dollars of products that could not be sold. This does not include another 10,000 full line sporting goods and hardware store outlets that sell fishing tackle to some degree. This, in our view, would represent an economic catastrophe for a broad segment of this country's tackle manufacturing and product distribution system.

Another important point to consider is that this bill would shut down manufacturers who currently are regulated and monitored under OSHA and by EPA, and, in turn, would cause an immediate explosion in basement and garage production of lead weights, and other lead tackle products. The fact of the matter is that this bill would not eliminate lead fishing weights and related products. It will simply shift the production of these products to unregulated sources.

Recent Industry Action. Mr. Chairman, AFTMA appeared before this subcommittee three years ago opposing similar legislation. At that time, the Association's opposition was based on two primary factors. First, we were unaware of any documented public health related problems associated with the use of lead in fishing tackle. Second, there was no clear, nontoxic substitute for lead in fishing tackle. Since that time, AFTMA and the industry at large has invested quite a bit of effort in examining the impact of lead on the environment and in searching for alternatives to lead for use in fishing tackle. Let me share with the subcommittee our findings. With regard to the impact of lead on the environment, it is known to be toxic to waterfowl if ingested. Historically, scientists have linked bird mortalities with ingestion of lead gun shot. More recently, cases of waterfowl death by ingestion of lead fishing sinkers have been reported. Ingestion of lead sinkers has resulted in the deaths of common loons, trumpeter swans, a Mississippi sandhill crane and a whistling swan.

Since 1975, five separate studies have investigated a total of 561 common loon deaths in the U.S. Lead poisoning from the ingestion of lead sinkers has been positively linked to the deaths of approximately 50 common loons. Between 1975 and 1986, a single study examined 72 dead swans to determine the cause of death. Lead poisoning from ingestion of lead sinkers was linked to four of these birds. Further, in 1992, the Fish and Wildlife Service reported that an immature Mississippi sandhill crane died from lead poisoning. A "flat, well-worn triangular lead object" that may have been a fishing sinker was recovered from its gizzard. Also, in 1973, one whistling swan died of lead poisoning after ingesting a lead sinker.

Other than these impacts to waterfowl, we have been unable to identify any other environmental impacts associated with the loss of lead fishing sinkers. One study that examined the potential impact of spent lead shot lying in bottom sediments of a lake (in concentrations far greater than fishing sinkers would ever be found) concluded that other than ingestion of lead shot by waterfowl, the environmental effects were negligible.

With regard to substitutes for lead, a variety of materials have been proposed or are already in use in the production of fishing tackle. These include bismuth, brass, copper, steel, tin, glass, tungsten, zinc, pewter, and other alloys. Due to physical and chemical limitations, none of these can be considered a perfect substitute for lead. Economic factors are also important in considering substitutes for lead. Most viable substitutes cost eight to ten times more than lead. Furthermore, many of these substitutes have not been investigated for potential toxicity to waterfowl or the environment. For example, EPA has suggested that zinc may be toxic in some situations.

To summarize the impact of lead fishing tackle on public health or the environment, we have documented the death of approximately 60 waterfowl from the ingestion of certain lead fishing sinkers. Further, with regard to substitutes for lead, no one metal or alloy will replace lead in all fishing applications, and at least one substitute that is being considered by the industry may also be toxic to waterfowl. Lastly, nearly all possible substitutes cost eight to ten times as much as lead.

EPA Action. Finally, Mr. Chairman, in March of this year, AFTMA's Board of Directors adopted a motion stating that "AFTMA should take a proactive rather than reactive position in facilitating the understanding of the impact that lead fishing sinkers may have on the health of waterfowl. Further, once the risks of lead sinkers are understood, AFTMA is committed to removing these risks from the environment." Toward this end, earlier this year AFTMA cooperated with EPA during their regulatory investigation on the impact of lead fishing sinkers on the environment. More recently, we understand that EPA has preliminarily determined that

certain lead sinkers present an unreasonable risk of injury to waterfowl, and that rulemaking under the Toxic Substances Control Act could ban the manufacturing, processing, and distribution of these sinkers.

Mr. Chairman, let me conclude by saying that the fishing tackle industry is an environmentally-conscious industry. Clean water, abundant habitat, and healthy fish are vital to our long-term interests. However, the combination of Congress' efforts to ban lead fishing sinkers and lures, coupled with EPA's investigation of lead sinkers, and the Environmental Defense Fund's press releases have created a great deal of concern and confusion in the fishing tackle industry. Every day I talk to manufacturers, wholesalers, retailers, and for that matter, anglers who want to know what to expect. Honestly, I cannot tell them.

In summary, Mr. Chairman, AFTMA is opposed to the provisions in S. 729 that address fishing tackle. We believe that in light of the scientific information presented in this testimony and the action proposed by EPA, the provisions are unnecessary. We hope that the information and opinions that we have shared with you today are of value in your deliberations. Clearly, our industry has a lot at stake with this proposed legislation and we sincerely thank you for the opportunity to have a voice in this process.

Thank you.

STATEMENT OF JAMES E. BOLDT, VICE PRESIDENT, WAYNE PIGMENTS CORPORATION, ON BEHALF OF THE COLOR PIGMENT MANUFACTURERS ASSOCIATION, INC., (LEAD CHROMATE COMMITTEE)

Mr. Chairman and members of the committee, I am James E. Boldt, Vice President of Wayne Pigment Corporation, and more importantly, one of the general partners of this small Wisconsin pigment manufacturing company.

I am here today as a representative of not only my company, but also of the Lead Chromate Committee of the Color Pigments Manufacturers Association, Inc. (CPMA). The CPMA is an industry trade group which represents approximately 95% of the companies providing color pigments in the United States, Canada and Mexico today. The Lead Chromate Committee represents the views of the CPMA with respect to issues directly involving the production and sale of lead chromate pigments. With the chairman's permission, I request that our statement be made a part of the record and a summarized statement given.

I would first like to begin by responding to the questions raised in the letter CPMA Executive Vice President Larry Robinson received from Senators Reid and Smith notifying the CPMA of the opportunity to appear before the Subcommittee today.

1. Is lead exposure a continuing problem for humans and for the environment?

The CPMA recognizes that exposure to bioavailable forms of lead is a continuing problem. I would point out, however, that lead chromate pigments are not used or intended for use in a manner which creates an exposure to the general population and children to lead. Nor do these pigments readily yield lead. They are not bioavailable.

2. Is it your contention that lead chromates and the pigments that are used in the manufacturing of these chromates fall into a different category than lead that is used in other paints? If so, please explain why this is true.

Lead chromate pigments and commercial paints which utilize these pigments are inherently much different than other types of lead pigments and paints. There are vast differences in the hazards posed by the lead oxide based paints used on bridges or white lead paints used years ago in housing, and yellow lead chromate pigments. I will discuss this issue in greater detail momentarily.

3. Do substitutes for lead in products that use lead chromates currently exist? If not, can such substitutes be developed within the bill's time period for the ban or phase-out?

There is no substitute for lead in lead chromate pigment products. The product and the industry which has developed to produce this product will quickly cease to exist if this bill is passed in its current form. If an exact substitute for lead chromate pigments existed, the industry and the markets for these pigments would have declined long ago. There are other pigments, which may be used in substitute (alternative) paints which are specifically formulated for the substitute (non-lead chromate) pigment. There are no substitutes which exhibit all of the properties, including color,

hiding and economy, of lead chromate pigments. The market for lead chromate pigments will decline rapidly if this bill is passed. Alternative products will be substituted by users who will not wish to utilize a product which has a compromised shelf life requiring expensive disposal. The automatic phase-out in the bill is not based on scientific analysis and ignores the hazards, costs, (including compromises caused by substitutes) and the health and environmental problems which may be posed by substitute products. What remains of the lead chromate industry supporting such uses as artists colors and plastics will probably move offshore, since economies of scale and volume will not likely allow U.S. manufacturers to compete.

4. Are the bill's provisions requiring notification of new lead uses and of products containing lead in excess of the percentage identified by EPA supported by your group? Please indicate the reason for your position and specifically articulate how you believe it should be changed.

The CPMA does not take a position with respect to the provisions in the Bill involving notification for new lead uses.

5. Is the standard set forth in Section 103(a)(5)(A)(i)(III) the appropriate standard that should be used in determining whether substitutes exist for lead chromate pigments? If not, please state your reason.

The CPMA believes that lead chromate pigment substitutes should be defined with the same standard used for other lead paints exempted in the Bill. That standard, paragraph 103(a)(5)(A)(i)(II), is based on the solubility of lead in the formulation of the final (cured) paint product. A level of less than 60 milligrams per liter by the ANSI 266.1 test is specified. Since many original equipment paints, primers and service paints utilize lead chromate pigments, consolidation would make the Bill more consistent.

As manufacturers of lead chromate pigments, we are very concerned about the devastating impact S. 729, the "Lead Exposure Reduction Act", will have on our industry, our companies and our employees. While the CPMA agrees with the goal of encouraging environmentally sound recycling of discarded lead, and that additional controls over certain specific uses of lead may be warranted, the member firms categorically disagree with the perceived need to place an outright ban on lead chromate pigments.

Actual exposure to lead in the ordinary use of lead chromate pigments is too small to quantify.

Lead chromate pigments do not pose a significant risk to health or the environment. They are produced safely in modern plants extensively regulated for elemental lead exposure under the OSHA lead standard and the Clean Air and Water Acts, as well as numerous state and local statutes.

This legislation if adopted as currently written would cause tremendous hardship to the lead chromate pigment industry. It would close three lead chromate pigment plants in the United States and idle 500 workers.

For my associates and me this legislation would cause severe financial hardship, but even worse, it would bring about the end of another American industry. Based on this testimony and the additional facts supplied to the committee, it can be concluded that the manufacture and use of lead chromate pigments does not pose a significant risk to health or the environment and will not impact lead exposure reduction in any significant way.

For these reasons, we respectfully request on behalf of the Color Pigments Manufacturers Association, Inc. that in S. 729 the manufacture and use of lead chromate pigments be evaluated on the basis of its solubility.

The manufacture and use of lead chromate pigments dates back well over 100 years and as such must be considered to be a mature industry. Because of this maturity, lead chromate pigments are some of the most extensively studied lead compounds for toxicity and for potential risk for specific applications. The various studies indicate that lead chromate pigments, when used properly, pose no significant risk to health or the environment. Feeding studies involving animals clearly indicate lead chromate pigments are not readily available to the human body. In the workplace, studies of individuals using lead chromate pigments have consistently found that these products are safe when used properly. Blood lead tests for workers exposed to products containing lead chromate pigments do not indicate levels higher than those found in the unexposed population. The Consumer Products safety Commission carefully monitors the use of lead in all consumer applications. We are not aware of any evidence that the ordinary commercial use of yellow lead chromate pigments threatens children or the general population.

With the wide variety of uses of lead chromate pigments it is necessary for our industry and your committee to ask the question of long-term environmental impact and disposal of lead chromate pigments.

Here too, extensive studies have been done and, as one would expect, the ideal situation for negligible impact is recycling, many products coated with paint or molded with plastic containing lead chromate pigment colors are recycled into products with added life, and new technologies in this area appear daily, particularly for plastics.

The balance of lead chromate pigment containing articles do, however, find their way into municipal solid waste or to incineration. As municipal solid waste, lead chromate pigments, particularly when encapsulated in plastic compounds and coatings, do not require Resource Conservation and Recovery Act disposal as hazardous materials. This is due to the fact that this lead compound has very low leachate characteristics. When lead containing products are incinerated, the heavy metals concentrate in the fly ash. But, results of tests conducted on leachate from monofills and disposal sites has shown very low lead leachate levels. This is further supported by the E.P.A. CORRE study of five incineration units which indicated that lead leachate concentrations were under the E.P.A. standard of five parts per million leachable lead. As I conclude my testimony, I would like to make sure the chairman and the committee understand the very small effect the elimination of lead chromate pigments will have in attaining your goal of lead exposure reduction. The lead chromate pigment industry represents but 1.1 percent of the total lead marketed and consumed in the United States. This fact, in addition to their very low solubility and their highly confined industrial usage, translates to negligible reduction of exposure.

The common goal of both industry and government through the course of the last ten years has been to improve the environment and make life safer for ourselves and our children. Articles can be seen virtually weekly in newspapers across the country, and I believe that these articles are the main thrust behind this push for lead legislation. The emotional response to these articles has produced a public outcry for more restrictions and cleanup of certain old lead housepaint. All of this comes at a time when lead exposure has been reduced by 50% or more over the last ten years.

We believe the current regulation of lead is doing what it was designed to do—sharply reduce blood lead levels across the country. Furthermore, E.P.A. is evaluating all remaining lead exposure routes and can make changes in current regulations, if needed.

Lead chromate pigments are colorants which are 1000 times less soluble than the naturally occurring lead compounds found in the Earth's surface, which when encapsulated in a variety of modern resins, dramatically decrease their availability to the human body or the environment.

As we address the issue of blood lead levels in children, the most important factor to be considered is the difference in toxicity and solubility of various lead compounds. To borrow the words of our forefathers: All lead compounds are not created equal, and it is this issue which is important in determining what is and what is not a significant risk to health and the environment.

The harmful nature of heavy metals such as lead is dependent upon the metal being in a form which is available to the body through ingestion or inhalation. This availability is only possible if the metal is capable of being solubilized in stomach acid. For example, lead carbonate, the bad actor which is generally accepted as having caused the increase in blood lead levels in children, is almost totally soluble in stomach acid. This product, also known as white lead, was extensively used for house paints years ago. When children eat paint chips containing this product, the lead compound easily dissolves and enters the bloodstream. In sharp contrast, lead chromate pigments, which are only used in commercial paints, are very insoluble in stomach acid. While these products are strictly confined to industrial nonconsumer coatings, their low solubility would not allow the lead to make its way to the bloodstream unless, in the unlikely event, extremely large quantities of the cured resin product were ingested.

Since the purpose of the testimony today is to discuss lead chromate pigments and the need to exclude them from this legislation, I would like to briefly explain what lead chromate pigments are and their very important uses.

A pigment, by definition, is a substance which imparts color to other materials. Lead chromate pigments are highly insoluble yellow and orange powders which are used in a wide variety of industrial products including paints and plastics. It is, in fact, the characteristics of stability and insolubility which largely dictate the value of a pigment. These pigments have found wide acceptance due to their excellent

combination of properties, the most important of which are bright color, high hiding, superior durability and, of course, economy. While there may be substitutes for these products in some applications there are not any materials which exhibit the same characteristics in application as lead chromate pigments. Lead chromate pigments have remained popular despite extensive regulation for that very reason.

In paints, lead chromate pigments offer valuable safety application attributes such as high visibility when used in traffic marking for highways and airports, and in areas of safety identification such as ambulances, fire trucks and fire hydrants.

I'm sure you will agree that these are important applications, as not one of us would like to be on the airplane that makes a wrong turn onto an active runway because the white direction markings are obscured in a snowfall.

The paint and coatings industry represents the largest use of lead chromate pigments, and it is important to note that due to existing regulation, lead chromate pigments are used only in industrial paint applications. They are not used in any paint product which is ordinarily available for sale to consumers. It is virtually impossible for children to be exposed to these products in sufficient quantities to cause harm.

The EPA recently released their draft "Preliminary Lifecycle Analysis and Pollution Prevention Assessment for Lead Pigments in Non-Residential Paint." The document states that occupational exposures to lead chromate pigments in traffic paint is of a low concern and that population risks are very uncertain. There is no evidence, despite decades of use, that low soluble lead chromate pigments pose a risk to the population at large in traffic yellow. The EPA Rulemaking process is a sound expert manner of addressing these concerns and should be allowed to move forward unhindered by additional legislation.

In plastics, lead chromate pigments provide bright vibrant colors, excellent heat stability, good working properties and, of course, excellent economy in a variety of packaging and commercial products. Lead chromate pigments are completely encapsulated when used in plastic resins and are not bioavailable.

The balance of this written statement includes a fact sheet titled "Lead Chromates What They Are And What They Are Not", some additional specific comments concerning S. 729, a longer document describing lead chromate pigments, their use and manufacturing processes, as well as a glossary of terms used in the industry.

SPECIFIC COMMENTS ON S. 729

The Lead Chromate Committee is a working group within the Color Pigments Manufacturers Association, Inc. ("CPMA") which represents the views of the CPMA on issues which pertain to lead chromate pigments.¹ The references provided below are taken from The "Lead Exposure Reduction Act", S. 729, a bill to amend the Toxic Substances Control Act to reduce the levels of lead in the environment, and for other purposes, as introduced on April 1, 1993, by Senator Reid et al. and published in the Congressional Record, at page S. 4301 (the "Bill").

The following are positions or suggested changes which the Lead Chromate Committee of the CPMA believe would more equitably and accurately provide a framework for the evaluation and possible restriction of lead chromate pigments.

EPA Proposed Rulemaking

The Lead Chromate Committee would like to point out that the Environmental Protection Agency is currently involved in a Comprehensive Review of Lead in the Environment. The EPA has recently released a new draft document titled "Preliminary Lifecycle Analysis and Pollution Prevention Assessment for Lead Pigments in Non-Residential Paint", March 1993. The Lead Chromate Committee does take exception to many of the conclusions drawn by this document, particularly as they involve lead chromate pigment substitutes and environmental hazards. The document does, however, point out that occupational exposure to lead chromate pigments is of a low concern and that any risk which may accrue to children or others with respect to lead chromate pigments is at best "uncertain."

The Lead Chromate Committee would prefer to allow this analysis process, already started at EPA, to move forward without the distraction of more legislation.

¹The CPMA is an industry trade association representing color pigment companies in Canada, Mexico and the United States. CPMA represents small, medium and large color pigments manufacturers throughout Canada, Mexico, and the United States, accounting for approximately 95% of the production of color pigments in North America. Color pigment manufacturers located in other countries with sales in Canada, Mexico and the United States, and suppliers of intermediates to the pigments industry are also members of the Association.

These are scientific and technical questions which should be evaluated in an administrative context by experts.

Objective criteria for Substitutes—Section 103(a)(5)(A)(ii)

Section 103(a)(5)(A)(ii) of the Bill states:

- "(I) has substantially equivalent corrosion inhibition and related performance characteristics to any paint or primer; and
- "(II) does not pose a greater risk to human health and the environment than a paint or primer in use for the applicable purpose specified in clause (i) on the date of enactment of this legislation."

The above definition does not specifically provide for any analysis of economic or technological feasibility. Nor does this section adequately provide for a comparison of the characteristics which define the performance of a color pigment. These characteristics include as examples, color, brightness, durability and hiding power. All of these characteristics, as well as an analysis of economic and technological feasibility, should be added to the Bill.

Lead Chromate Solubility—Section 103(a)(5)(A)(i)

Section 103(a)(5)(A)(i) of the Bill states:

"... the Administrator shall determine, following public notice and opportunity for comment, whether there is:

- "(II) Original equipment manufacturer paint, primer, or service paint or primer for equipment used for agricultural, construction . . . that in the dry coating, has a lead solubility of less than 60 milligrams per liter as described by American National Standards Institute (referred to in this subtitle as "ANSI") standard Z66.1."

While paragraph (III) states:

- "1 (or more) substitute for paints containing lead chromate pigments for use in any class or category of uses that contains less than or equal to .06 percent lead by weight in dry film."

The Lead Chromate Committee believes that the same solubility standard (ANSI Z66.1) for acceptable coatings should be applied to all of the above paints. Since many of the original coating paints referenced are made with lead chromate pigments this would avoid considerable confusion in administration. It is recommended, therefore, that lead chromate pigments be incorporated in paragraph II, which would allow for deleting paragraph III, as follows:

- "(II) 1 (or more) substitute(s) for original equipment manufacturer paint, primer or service paint or primer for equipment used for agricultural, construction, and general industrial and forestry purposes or paints which contain lead chromate pigments for use in any class or category of uses that, in the dry coating, has a lead solubility of less than 60 milligrams per liter, as described in the *test methods* used by the American National Standards Institute (referred to in this subtitle as "ANSI") standard Z66.1."

(Delete Paragraph III)

13-14 Year Phase Out—Section 103(a)(5)(E)(i)

Sections 103(a)(5)(E) (i) and (ii) of the Bill provide for the phase out of all paints containing lead or lead chromate pigments even if they are exempt and even if no viable substitute is found.

It is the position of the Lead Chromate Committee that these provisions are not in the best interests of the public, the taxpayer, the consumer or the environment. These provisions ban products without regard to the toxicity, the environmental impact of substitutes or the costs and consequences which may accrue to the economy. These provisions should, therefore, be removed from the Bill.

[NOTE: Additional attachments to this statement have been retained in committee files.]

STATEMENT OF THE COALITION FOR SAFE CERAMICWARE

The Coalition for Safe Ceramicware ("CSC" or "Coalition"), an organization of the world's leading manufacturers of fine china and other high quality ceramic tableware products, supports the adoption and strict enforcement of responsible, scientifically-based safety standards for lead in ceramicware. Recent sharp reductions in FDA's informal "regulatory guidelines" for lead in ceramicware have now put in

place standards that are more than sufficient to protect public health. These standards should be adopted as part of any formal FDA regulations issued pursuant to the Act.

The Coalition has previously expressed its views on the relevant provisions of S. 729 and will not do so again here. The CSC's major purpose in submitting this statement is to assist members of the Subcommittee in better understanding of the marginal use of lead in ceramicware. Accordingly, this statement briefly explains why lead is used in ceramics; reviews the history of FDA's regulation of tableware and the CSC's involvement in the rulemaking proceeding that led to the issuance of FDA's current, very stringent regulatory guidelines; and describes the industry's continuing efforts to develop unleaded glaze and color systems.

Why Lead is Used in Ceramic Tableware

For centuries, the production of ceramic tableware has relied on the use of lead as a chemical component of the glaze and/or decorations. Lead imparts many valuable properties, and despite years of research looking for substitutes, no alternative material has yet been found which has all of lead's desirable attributes. Lead dramatically improves the chemical durability of glazes and colors, helping them to withstand detergent attack; it produces a smooth durable hygienic surface that resists scratching and knife marking. Lead allows the glaze to melt and flow over a wide range of temperatures, to match the coefficient of expansion of the ceramic body, and to produce a uniform, smooth surface. It also stabilizes decorating colors, allowing a broader palette of colors to be used without fading during firing. Lead imparts a brilliance that has not been matched by any other material.

The critical point to understand is that through careful product formulation and strict manufacturing process controls, the *leachable lead* in the product—that is, lead that is sufficiently soluble that it can be released into foods and beverages under certain conditions—can be kept to absolutely minuscule levels that give rise to no public health concern. Given that many ceramic tableware products could not be produced without the use of leaded glazes and/or colors, the responsible course is to adopt standards that limit lead release to levels that are consistent with both available manufacturing technology and credible public health concerns.

FDA Regulation of Ceramic Tableware

The U.S. Food and Drug Administration has regulated ceramic tableware since 1971 pursuant to authority granted in the Federal Food, Drug & Cosmetic Act to ban distribution in U.S. commerce of "adulterated food." In 1971, the agency promulgated an informal "action level" (that is, a lead release level above which the ceramicware would be considered to be "adulterated") of $7 \mu\text{g/mL}$ (7 micrograms per milliliter, often expressed as 7 parts per million (or 7 ppm)) for all types of ceramic tableware. In 1980, based on additional medical studies and recommendations by the World Health Organization, this single action level was superseded by three separate action levels for different categories of ceramicware, as follows:

Flatware (ie., plates) 7.0 ppm

Small Hollowware (e.g., cups and small bowls) 5.0 ppm

Large Hollowware (e.g., pitchers and large bowls) 2.5 ppm

The approved test for leaching involves filling the ceramicware article with a 4 percent acetic acid solution for 24 hours at room temperature. The test significantly overpredicts the leaching potential of all beverages and foods in real use, including the most acidic.

After a 1988 hearing by Rep. John Dingell highlighted problems with the storage of acidic beverages in ceramic "craftware" that was improperly produced, resulting in lead release far in excess of FDA's action levels, FDA published a proposal in June 1989 to establish a formal regulatory limit for leachable lead in ceramicware food-service pitchers of 0.1 ppm—a 25-fold reduction from the existing action level of 2.5 ppm. Since 0.1 ppm is the limit of detection for the official test method, this proposal amounted, in effect, to a ban on lead in pitchers. The agency also asked for comments on a broad range of issues relating to lead and ceramicware, including the appropriateness of reducing the lead release standards for ceramicware products other than pitchers.

The Coalition for Safe Ceramicware was organized in response to FDA's proposed pitcher rule. In November 1989, the Coalition filed a substantial brief with FDA addressing the proposed reduction in the federal action level for leachable lead in pitchers. The centerpiece of the Coalition's submission was a detailed quantitative risk assessment that focused upon two beverages—orange juice and milk—that are sometimes stored and served in ceramic pitchers. Based on extraction testing data for these foods (and assuming "worst case" 90th percentile consumption levels), the

Coalition's safety assessment concluded that FDA acetic acid test levels of 0.51 $\mu\text{g}/\text{mL}$ or less resulted in blood lead levels that kept 99.9 percent of 2-year old children within FDA's target maximum blood lead range of 10-15 $\mu\text{g}/\text{dL}$. On the basis of this evidence, the Coalition urged FDA to reduce the lead release level for pitchers to 0.5 ppm.

Following the submission of these "Phase I" comments, the Coalition commenced an even more extensive program of extraction testing with respect to flatware, small hollowware (cups and bowls) and large hollowware other than pitchers. The Coalition's "Phase II" safety assessment was submitted to FDA in February 1991. In that submission, the Coalition concluded that the current action levels for flatware and small hollowware, properly enforced, are fully adequate to protect the public health and that the current limit for large hollowware other than pitchers is also sufficiently protective of public health. Nevertheless, the members of the Coalition recommended adoption of lower action levels achievable using the latest available technology. The Coalition urged the agency to reduce the action levels from 7.0 to 5.0 ppm for flatware, from 5.0 to 2.5 ppm for small hollowware, and from 2.5 to 1.5 ppm for large hollowware other than pitchers.

In April 1992, FDA announced interim action to lower its informal action levels for lead in ceramicware pending completion of the formal regulatory proceeding. The new "regulatory guidelines" were as follows:

Flatware 3.0 ppm

Small Hollowware other than cups and mugs 2.0 ppm

Large Hollowware other than pitchers 1.0 ppm

Pitchers 0.5 ppm

Cups and Mugs 0.5 ppm

Significantly, the 0.5 ppm level for pitchers was in accordance with the Coalition's "Phase I" safety assessment. The new guideline of 0.5 ppm for cups and mugs represented a 90 percent reduction from the previous level of 5.0 ppm for all small hollowware. FDA took this action based on evidence that ceramic cups and mugs could contribute a significant portion of adults' total ceramic-related lead intake (due to high consumption levels of coffee and tea).

In taking this action, FDA recognized that reputable ceramicware manufacturers must maintain average lead release levels that are only a fraction—perhaps as little as one-fifth or less—of the legally prescribed limit in order to accommodate minor variations in metal release levels attributable to normal and unavoidable manufacturing variations. In lowering the regulatory limits for pitchers and cups and mugs to 0.5 ppm, for example, FDA recognized that compliance with these levels would effectively require manufacturers to maintain average lead release levels of approximately 0.1 ppm—FDA's professed goal in its proposed pitcher rule and a level acknowledged to be the level of detection for the approved acetic acid test. And indeed, test data for the Coalition's members confirm that their pitchers, cups and mugs generally have mean test values of 0.1 ppm or less, and that their other products also typically have mean lead release values that are only a fraction of even FDA's newly-reduced action levels. This additional "margin of safety" provides a significant extra measure of protection to consumers.

The Search for Alternatives to Lead is Being Accelerated

Manufacturers and their material suppliers have, over the years, reduced or eliminated the use of lead wherever possible in the manufacturing process. Where lead has continued to be used, every effort has been taken to minimize levels of leachable lead through strict product formulation and manufacturing process controls. Increased regulatory concern over the past four years has, however, forged a strong consensus among most of the major participants in the worldwide ceramic tableware industry that the industry must develop alternatives to lead in the manufacturing process. Virtually coincident with the publication of FDA's proposed pitcher rule in mid-1989, massive campaigns to develop unleaded glazes and decorations were launched by the members of the Coalition for Safe Ceramicware, both individually and collectively. It is noteworthy that these costly initiatives are continuing despite the financial hardships faced by many of our manufacturers resulting from the recession.

Certainly the most important of these initiatives was the three-year collaborative research project conducted between January 1990 and December 1992 by British Ceramic Research Limited ("CERAM"), the world's acknowledged leader in ceramic research and development. The project was funded by the United Kingdom's Department of Industry and by CERAM's subscribing membership, which includes major ceramic tableware manufacturers from the U.K. and around the world, including such U.S. firms as Pfaltzgraff, Lenox and Syracuse. Costing around £1 million, the

project had as its aim the identification of novel unleaded glazes for fine china ad flux systems for decorations. Shortly after the project commenced, the industry participants decided to inject a additional £70,000 *per annum* into the program, thereby allowing CERAM Research to increase the number of personnel working on the project.

The CERAM R&D project identified three generic unleaded glaze ad color systems with potentially wide application in the ceramic tableware industry. Nevertheless, CERAM concluded that additional work was necessary to improve the quality of the glaze systems under normal manufacturing tolerances and to further improve the chemical durability ad palette range of some of the unleaded colors that had been developed. Accordingly, at the conclusion of the R&D project in late 1992, the participants in CERAM's study agreed to and a two-year "continuation project" to address these technical problems. While the U.K. Department of Industry gave technical approval to the project, budgetary constraints prevented the ministry from contributing to its funding. Accordingly, CERAM's subscribing membership will be funding the continuation project in its entirety, at a cost of approximately £250,000 annually.

Both as part of CERAM's original and continuation projects, and independently, research and development with respect to unleaded glaze ad decoration systems are also being undertaken by the major worldwide suppliers of ceramic materials, as well as by individual ceramic tableware manufacturers. New tableware patterns provide the first opportunity for use of the unleaded glazes and colors that have thus far been developed by suppliers. A tremendously greater challenge is posed by conversion of existing patterns from leaded to unleaded systems.

Among the technical hurdles that must be overcome in the development of unleaded glazes and decorations are the following:

- A particular unleaded glaze may be acceptable for hollowware products, but unacceptable for flatware. This is because of flatware's greater surface area, which more clearly exposes nonconformities in the glaze.
- Glazes and decorations truly function as a system, with the chemistry of each affecting the other. Apparent "breakthroughs" in unleaded decorations, for example, can be quickly dashed when those decorations are used in conjunction with a particular unleaded glaze; the two may simply be incompatible.
- The successful development of unleaded glazes and decorations depends upon far more than elimination of lead as a constituent. Because lead is a natural contaminant of many of the materials used to produce glazes and decorations, trace levels are unavoidable. Where lead is present as an impurity, rather than as an intentionally added chemical component of a glaze or flux, the lead occupies interstitial spaces in the glass, from where it can easily be leached by acid. An unleaded color containing only minute quantities of lead as a contaminant might well release significant quantities of lead from a transfer; indeed, the lead release could well exceed that of a normal low solubility leaded color.
- While there has been some progress in unleaded color development, the color palette remains limited. Red and blue colors have been a particular problem. Until unleaded versions of these colors are developed, manufacturers will be unable to produce unleaded versions of many existing patterns.

Once these technical hurdles are overcome and successful unleaded glaze and color systems are developed, an entirely different set of hurdles will be confronted in attempting to integrate the new systems into existing production facilities. Most importantly, the tendency of unleaded glazes and decorations to "pick up" lead particles present on existing kiln linings and production machinery suggests that the industry will need to replace much of its production equipment with new lead-free equipment in order to utilize the new lead-free glaze and decoration systems. The level of investment that will be necessary is massive by any definition, and possibly beyond the means of many smaller manufacturers. In order to make these investments tolerable for even the largest firms in the industry, these purchases will need to be made over a period of years, rather than at one time.

In summary, the development of unleaded glaze and color systems for the industry as a whole is far more complicated a task than announcements of individual "lead-free" product lines might suggest. Each product demands a virtually unique solution, and success—if it comes at all—will come only in small increments. There has been significant progress to date, but much additional research needs to be done. Perhaps more importantly, the fruits of that research will, in the real sense, not be usable by the existing ceramic tableware industry; practical use of these new materials will effectively require the *transformation* of the industry into a new industry with new production equipment and techniques. This transformation is already underway, but it will necessarily take time, both for the new materials to be

developed and the necessary investments in new production facilities to be made. The members of the Coalition for Safe Ceramicware are, however, devoting their best efforts to pursuit of this goal.



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TESTIMONY OF
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before the

SUBCOMMITTEE ON TOXIC SUBSTANCES,
 RESEARCH AND DEVELOPMENT

of the

SENATE COMMITTEE ON
 ENVIRONMENT AND PUBLIC WORKS

on

S. 729, THE LEAD EXPOSURE REDUCTION ACT

June 29, 1993
 (Submitted: June 25, 1993)

The Environmental Defense Fund appreciates this opportunity to submit testimony. The Environmental Defense Fund is a national nonprofit environmental organization with over 200,000 members. Since its founding in 1967, EDF has worked to minimize human exposures to toxic substances, with special attention to lead. In particular, EDF played a major role in the phase-down of lead in gasoline. This testimony was prepared principally by Karen Florini, Senior Attorney with the Environmental Defense Fund's Washington, DC office.

In general, we support many of the provisions of S. 729, the Lead Exposure Reduction Act, or "LERA", as constituting a useful step in addressing the nation's

most significant environmental threat to children: lead. However, we urge the Committee to ensure that the provisions of this bill are fully consistent with those of the Residential Lead-Based Paint Hazard Reduction Act of 1992, enacted as Title X of the Housing and Community Development Act (commonly referred to as Title X). We also believe that LERA's mandates with regard to inspections of schools and day care centers should be clarified and made enforceable.¹

In addition, as discussed in the concluding section of this testimony, we urge members of this Committee to support separate legislation now being developed to address the related issue of the urgent need for adequate and stable funding of lead-hazard abatement activities in low-income housing and day care centers.

This testimony focuses on two questions: first, is lead exposure a continuing problem for humans and for the environment?; and second, is S. 729 significant in terms of the ongoing efforts to address the problem of lead exposure to children and others in this country?

In brief, our answers are as follows:

First, no reasonable person can disagree that lead exposure continues to be a severe problem in America today. As noted by sources including the U.S. Environmental Protection Agency, the Centers for Disease Control, the American Academy of Pediatrics, the Association of State and Territorial Health Officials, and virtually all other experts, millions of children today have unacceptably high lead exposures.

Lead is harmful even in very small doses and the environment is already widely contaminated. These two factors taken together mean that no other substance poses a greater environmental threat to the nation's populace, most especially its children. An estimated three million children -- 10% to 15% of all preschoolers -- have lead levels high enough to cause significant and irreversible impairment of their neurologic development, resulting in reading disorders, attention deficits, and many related problems. Addressing current pollution is necessary but difficult, and ultimately reducing exposure requires a proactive initiative.

With regard to the second question, S. 729 is significant in addressing ongoing uses of lead because the manufacture, use, and disposal of products

¹ EDF concurs in the testimony of the Alliance to End Childhood Lead Poisoning and that of the National Parent-Teacher Association with regard to the school and day-care issues.

containing lead disperses yet more lead into the environment, thus making a bad situation worse. The U.S. continues to introduce into commerce every year well over a million tons of lead. For some products, such as lead-acid batteries and radiation shielding, there are no viable substitutes, but for many others there are. Curtailing the unnecessary uses enables our society to avoid the exposures to and releases of lead that occur throughout the entire life-cycle of lead-containing products: during mining and smelting of the lead, during product manufacture and processing, during product use, and upon eventual disposal. It is far easier to avoid using more lead in newly manufactured goods than to try to clean it up after it has been dispersed into our homes, cities, and countryside.

Indeed, it is the extreme difficulty of cleaning up lead after it has been dispersed that mandates aggressive restrictions on further use of lead. In particular, abatement of lead-based paint and lead-contaminated soils and dust are both multi-billion-dollar tasks for which essentially no funds are now available. Even if those funds became available tomorrow, completing the cleanups would take at least the remainder of the decade. This sorry state of affairs makes it all the more incumbent upon us as a society to take every available step to reduce all further loadings from unnecessary continuing uses of lead.

S. 729 will, over time and in conjunction with other programs, allow our society to make significant progress in reducing lead exposures. Years ago, an early psychologist reportedly would apply a very simple test to determine whether a particular person was sane. The person would be given a mop and bucket and put in a room in which a sink was full to overflowing with the water still running. A person was judged sane if he or she first turned off the faucet before starting to mop the floor. This legislation is about turning the faucet off. By restricting unnecessary uses of lead, we will avoid undercutting other initiatives, such as abatement of residential lead-paint hazards.

This legislation is also needed because EPA and other federal agencies have shown themselves to be unable or unwilling to use their existing authorities in a comprehensive and aggressive fashion. Moreover, the Fifth Circuit's shocking decision to vacate EPA's ban on asbestos calls into doubt the utility of the Toxic Substances Control Act (TSCA) in taking comprehensive steps absent amendments such as those provided by LERA. Unless we are willing to resign ourselves to having similar hearings again after the year 2000, enactment of this legislation is appropriate now.

The remainder of this testimony addresses these questions at greater length. The two sections provides background information, while the third contains our comments on selected provisions of the bill (particularly on the

product restriction and new-use provisions. With regard to these provisions, we concur in the testimony presented at today's hearing by the Alliance to End Childhood Lead Poisoning.

1. The Continuing Problem of Lead Exposure

Because lead is an element, it does not decay or lose its toxicity over time. In the human body, its half-life is measured not in weeks, months, or even years, but in decades. In the environment, its half-life is indefinite. Once lead is disinterred from natural ores, it can be shifted from here to there, presenting a threat of greater or lesser immediacy at one location or another -- but it does not stop being lead.

For thousands of years, humans have dug up this metal and used it in ways that have contaminated the biosphere. But during most of our history as a species, humans have been exposed only to the minute amounts of lead that entered the biosphere through weathering of the earth's crust and similar forces. The level of lead in human blood in pre-industrial times has been estimated at around 0.016 micrograms (millionths of a gram) of lead per deciliter of blood (0.016 ug/dL) (Flegal & Smith, 1992).

Today, however, average blood-lead levels in the United States are several hundred times higher. These are the legacy of decades of dispersive use of lead in paint, gasoline, plumbing systems, and other products. Although blood-lead levels have declined roughly three-fold over the past two decades, in the wake of restrictions on the use of lead in gasoline, paint, and food-can solder, the current average level in children is still about 5 ug/dL (EPA, 1991) -- some 400 times above the natural background level.

Indeed, as indicated by Figure 1 (below), we are all proportionately far closer to the lethal dose of lead than to the background level -- a factor that must weigh heavily in shaping public policy on lead.

³ This section is adapted from Florini and Silbergeld (1993).

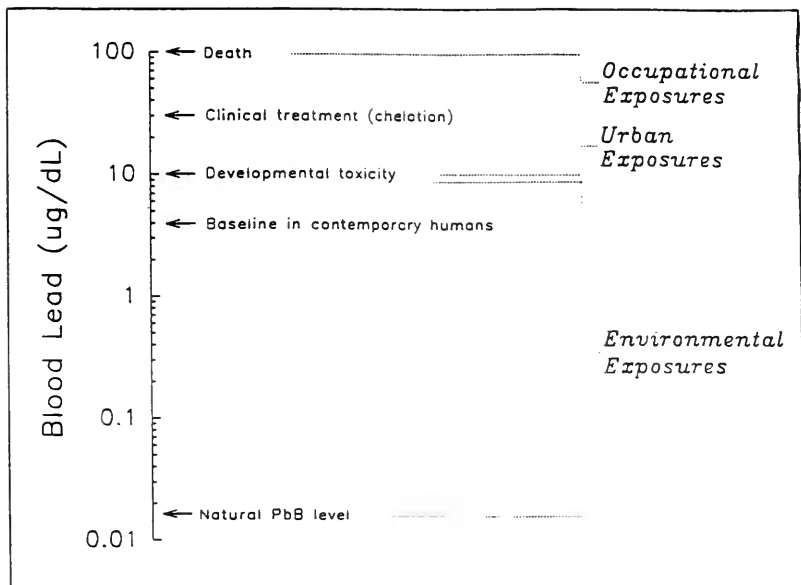


Fig. 1. From Smith and Flegal (1993).

The fact that current exposures greatly exceed natural ones does not by itself indicate that higher levels are harmful. But a wealth of evidence supports the conclusion that they are, particularly to the developing brains of children.

At levels beginning at least as low as 10 ug/dL, lead impairs neurocognitive function in young children, measured in terms of decreased IQ, impaired short-term memory, slowed reaction time, and reduced ability to concentrate. For example, one recent study by Bellinger et al. (1992) of middle and upper-class Boston children found that an initial 10 ug/dL differential in blood-lead levels at age 24 months was associated with a 5.8 point gap in average IQ scores, adjusted for confounders.

The effects of lead on children and beyond childhood. A series of studies directed by Needleman and colleagues demonstrate that blood-lead values indicate only exposures occurring within the last month or so; the researchers ranked children's lead exposure based on their dentine (tooth) levels, which reflect longer-term exposure patterns. Following these children through high school, these investigators found that, compared to children with the lowest dentine-lead levels, children with the highest levels were seven times more likely to drop out of school. They were also six times more likely to suffer from reading disabilities (defined as reading two or more grades below the expected level), and achieved lower final class standing in high school (Needleman et al. 1990).

The neurotoxic effects of lead do not appear to have a threshold. Some is bad, and more is worse. If there is a threshold, it may well be far closer to natural background levels than to current exposures. There is no reason to believe that the 20-year trend of reductions in the levels of concern for lead poisoning -- from 60 ug/dL in 1970, to 40 in 1971, 30 in 1978, 25 in 1985, and 10 as of 1991 -- will not continue in the years ahead, as yet more data accumulates and research methods continue to improve.

The problem of lead's innate toxicity is greatly compounded by the fact that lead is widely dispersed throughout our environment, and indeed our populace. EPA estimates that 15% of children under age 6 -- nearly 3 million preschoolers -- has blood-lead levels over 10 ug/dL, the current federal level of concern.

These staggering numbers of lead-affected children are primarily the legacy of decades of use of lead in residential paint, and decades of use of lead in gasoline. Only the U.S. has the misfortune of suffering from this self-inflicted double whammy: no other nation used both leaded paint and leaded gasoline in such quantity. Specifically, Americans used more gas -- and thus more lead -- than anyone else in the world during the decades in which gasoline had its highest lead concentrations. Indeed, the U.S. accounted for over 80% of the leaded gasoline sold prior to 1970 (Nriagu, 1990). EPA estimates that total lead usage in gasoline exceeded 5 million tons as of 1986 (ATSDR, 1988, p. II-66 (data converted from metric to short tons).

Because lead is an element -- one of the fundamental building blocks of matter -- it cannot be degraded or transformed into some other material. So the 5 million tons of lead from gasoline, along with an almost-equal amount of lead from paint, together with lead from myriad other products such as leaded drinking-water pipes, is still in our environment: some of it in our landfills, it altogether too much of it in our soils, streets, playgrounds, and rivers, and in our

bodies and those of our children. And even lead sequestered in a landfill will outlast any containment system of human devising.

Moreover, as a practical matter, further releases of lead to the environment will inevitably occur for years to come. This is because there are currently no substitutes for some crucial applications of lead, such as lead-acid batteries. Battery manufacturing (including recycling) will continue to contribute lead to the environment, particularly as long as smelters continue to violate existing (albeit inadequate) standards for smelters, as discussed below. And no recycling system will ever recapture all lead batteries.

Similarly, the lead that is found in or on half of the nation's homes will be released to some degree as those homes are renovated or demolished during the next several decades, especially if abatement programs remain so egregiously underfunded. And stockpiles of lead in items such as old wine foils and even LP's will find their way into the municipal waste stream.

In short, even if not a single additional ounce of lead were introduced into commerce starting tomorrow, the mind-boggling quantities of lead already in our environment would still cause unacceptable exposures for many members of our society.

It must also be noted that overall lead usage in this country has not changed substantially over the past two decades: U.S. lead demand in 1991 was only about 4% lower than in 1971 (Bureau of Mines 1993). While many of the most dispersive uses have been curtailed, even non-dispersive uses contribute to human exposure. Indeed, every use of lead directly or indirectly involves human exposure and environmental release of lead. This is so regardless of whether the product causes exposure during ordinary use by the consumer, for releases occur both at the beginning and at the end of lead's life-cycle as well.³

Significantly, primary and secondary lead smelters regularly are reported to be in violation of existing occupational and environmental standards.⁴

³ Moreover, the continued use of lead in consumer products contributes lead to incinerators when consumers discard those products. As a result, ash requires management as a toxic material rather than being available for safe reuse. Ash management is a highly controversial issue; this problem cannot be regarded as one our society has solved.

⁴ An estimated 200,000 children under six lived within a three mile radius of primary and secondary smelters operating in 1985. (ATSDR, 1988, p. VI-28.)

(Bureau of Mines, 1988, pp. 9-12.) And those existing standards are regarded by experts as inadequate. The Environmental Protection Agency's Clean Air Scientific Advisory Committee recently noted that the current standard provides "relatively little, if any, margin of safety" (EPA/SAB, 1990, p. 3).

Similarly, occupational lead exposures are unacceptably high throughout major portions of the workforce. As a result, workers are at risk of the adverse health effects previously described. For the large and growing percentage of the workforce that is female, there is the possibility that some of the lead stored in the body over years may be transferred to the developing fetus during pregnancy. As noted in a recent editorial in the *American Journal of Public Health*,

Present [occupational] standards are not protective. . . . Workers exposed to lead at levels below the current [standard] are suffering toxicity. * * *

The continuing overexposure of American workers to lead and the persistent occurrence of occupational lead poisoning is a national scandal.

(Landrigan, 1990.) That editorial accompanied a pair of articles describing the appalling degree to which occupational over-exposures to lead continue to be both commonplace and under-recorded (Maizlish et al., 1990; Rudolph et al., 1990).

Indeed, as acknowledged by the Occupational Health and Safety Administration (OSHA) in 1978 when it promulgated the workplace air-lead standard of $50 \mu\text{g}/\text{m}^3$ -- the standard that remains in effect today -- even full compliance with that standard would leave nearly 30% of exposed workers with blood-lead levels above $40 \mu\text{g}/\text{dL}$. See 43 Fed. Reg. 52952, 52963 (Nov. 14, 1978). OSHA acknowledged that this standard, even in light of information then available, was not truly protective, but adopted it anyway because of considerations of "feasibility" in achieving workplace limits for many lead-using industries. But where another materials can be substituted for lead in the production process, lead exposures can be avoided altogether without need for workplace controls. In short, even if an industry meets the current OSHA lead standard, excessive worker exposure to lead remains entirely possible.

So we start the last decade of the 20th century in an environment that has too much lead, with a populace that has too much lead, especially in the workforce, and most of all, with children who have too much lead. There is no margin of safety whatsoever. Rather, for large segments of our society and

perhaps for us all, the present reality is one of disease and dysfunction attributable to lead.

With this backdrop, **the question is not why should we restrict the use of more lead in commerce; it's why should we allow any.** As we begin grappling seriously -- for the first time, and much belatedly -- with the problem of ridding our environment of lead contamination, the only sensible course is to forego unnecessary uses of lead in order to minimize the further releases of lead that accompany, to one degree or another, any use of lead. It is an inherently false dichotomy to assert that we should worry about cleaning up after historical uses of lead and in the meantime ignore current and future ones. We can, and take steps on both fronts, guided by the recognition that it may be appropriate to prioritize and move more quickly to address the intensive exposures currently posed by existing reservoirs of lead contamination.

Before discussing in detail some of the specific provisions of S. 729, it is worth pausing to note that, since 1976, EPA has had broad authority under TSCA to take any of a variety of actions restricting the uses of chemical substances, including elements such as lead. During that period, only one set of comprehensive TSCA regulations has been adopted, namely those promulgated for asbestos in July 1989. Development of those regulations took a full decade. On October 18, 1991, the Fifth Circuit struck down those regulations as unsupported by "substantial evidence" in an extraordinary opinion that seriously undercuts the utility of Section 6 of TSCA. *Corrosion Proof Fittings, et al., v. Environmental Protection Agency*, 947 F.2d 1201 (5th Cir., 1991). Simply leaving EPA to try to use the authorities of existing section 6 of TSCA -- which were unwieldy even before the 5th Circuit's decision -- is an untenable approach.

Finally, in imposing controls directly on a substance of particular concern, S. 729 follows a precedent created with TSCA's initial passage. During the debates on the enactment of TSCA in 1976, Mr. Dingell offered and the House adopted an amendment that legislatively phased out virtually all uses of PCBs. As Mr. Dingell stated on that occasion,

"Why do we single out PCBs?

"For many reasons. First of all, they are enormously persistent. Second, they are enormously dangerous. Third, they accumulate in the food chain. They flow upward toward human use. * * * [Further,] the history of EPA is not one of vigorous and quick action."

(Remarks of Mr. Dingell, House Floor Debate, August 23, 1976, *reprinted in* Committee on Interstate and Foreign Commerce, 94th Cong., 2d Sess., *Legislative History of the Toxic Substances Control Act*, pp. 581-82 (Committee Print).

Each of these points is equally applicable to lead. Indeed, as an element, lead is even more persistent than PCBs, which can at least theoretically be broken down into their constituent atoms of carbon, hydrogen, and chlorine. And as a neurotoxin, the injury lead causes to our society is clearly of a magnitude comparable to the carcinogenic threat posed by PCBs. While lead is less likely to contaminate the food chain, lead accumulates within the human body just as PCBs do (though lead is stored in bone while PCBs are stored in fat).

Accordingly, just as Congress in first enacting TSCA limited the use of PCBs, so it is entirely appropriate for Congress to amend TSCA to curtail unnecessary lead use.

2. Comments on Selected Provisions of S. 729

S. 729 sets up an appropriate mechanism for taking a next step in curtailing non-essential uses of lead. Section 403 limits the lead content of certain specified products to certain specified concentrations. These products are those for which adequate substitutes appear to be available, or for uses that are not essential. However, it is critical to note that the EPA Administrator retains authority to increase or decrease the targeted percentages upon making certain findings. This ensures that, if appropriate, the figures contained in the statute can be revised following rulemaking. At the same time, the fact that section 403 includes specified default concentrations ensures that the regulatory process will not be stalled by bureaucratic inertia or by industry efforts to hide the ball.

This approach draws upon lessons learned from another act under this subcommittee's jurisdiction, namely the Resource Conservation and Recovery Act. In the 1984 Amendments to RCRA, Congress designed a highly effective mechanism for ensuring timely promulgation of predisposal treatment standards for hazardous wastes: namely, if EPA failed to promulgate standards by a particular date, all land disposal was prohibited. This so-called "hammer" provision created a powerful incentive for the executive branch to complete regulatory action on the schedule envisioned by Congress. Significantly, few RCRA mandates except those accompanied by hammers have been met within years of the deadline. Absent an analogous hammer provision such as that included in this bill, the prospect of rapid progress in imposing restrictions under TSCA on lead use remains at best hypothetical.

Comments on selected provisions of Section 403 are outlined below.

-- **Paint and pigments:** We urge the Committee to tighten the phaseout timetable with respect to lead chromate pigments, which now are provided with up to 13 years of extensions. There are certainly no grounds for further

weakening of this provision, despite industry arguments that lead chromate is not hazardous because of its low solubility compared to some other lead compounds.⁵

That argument is based on a faulty assumption that groundwater contamination is the route of concern. But it is not. As with other lead-containing paints, the most significant hazard from lead chromate paint arises when the paint deteriorates into particles that contaminate the environment.

Such deterioration obviously occurs on a regular basis. If it did not, painted lines on streets would not wear off, nor would other painted surfaces require repainting.

For lead that exists in minute particles in dust and soil -- the kind that can easily be taken in by a child during hand-to-mouth behavior -- the question is what happens to lead once it enters the extremely acid environment of the human gut. The normal pH of the stomach is 1 or 2, which makes lead far more soluble than it is in ordinary drinking water.

Experiments on animals indicate that the solubility of different lead compounds falls within a relatively narrow range (about a single order of magnitude). Researchers administered lead compounds to different groups of rats, then analyzed lead levels in the kidney compared with lead acetate absorption. Table 1 indicates the comparative absorption levels.

In short, once lead chromate gets where it counts -- into the stomach -- its solubility is not dramatically different than lead compounds with a long history of causing severe lead poisoning. Particularly in light of the millions of children who today have unacceptably high lead levels, it is the height of stupidity to continue to allow use of products like lead chromate paints that are inherently dispersive and that will inevitably add yet more lead to the human environment.

Occupational exposures to leaded paints -- including lead chromate -- must also be considered. Almost 20,000 workers in California alone are estimated to be exposed to lead while painting with lead-based paint, or welding, machining, or sanding surfaces painted with lead-based paint. (Rudolph et al. 1990.) Even in Massachusetts, where awareness and regulation of lead hazards far outstrips that in most of the rest of the nation, 75% of workers reported to

⁵ Lead chromate is toxic not only because of the presence of lead, but also of chromium. Chromium metals salts are considered to be human carcinogens; they have tumorigenic, genotoxic, and clastogenic effects. See Wise, JP, et al. (1993), and literature cited therein.

have highly elevated blood-lead levels (i.e., above 60 ug/dL) were construction workers, principally in deleading, bridge painting, and painting (Massachusetts Department of Labor, 1992). Similarly, 54% of adult lead poisonings (greater than 25 ug/dL) reported in Maryland involved construction workers (Maryland Department of the Environment, 1990). Many of these poisonings are caused by exposures to other varieties of leaded paints. The critical question, again, is why make a bad situation worse by using yet more leaded paint, given the lead exposures already faced by painters?

And, just as adequate substitutes exist for residential paint, so they also exist for non-residential paint. States such as Virginia are already using non-leaded paints for traffic highway markings.

In short, restricting all uses of lead-based paint will both curtail this unnecessary and particularly dispersive lead use, and ensure that misuses of leaded paint for residential purposes can no longer occur.

-- **Curtain weights:** Lead is used in curtain weights solely because it is heavy and cheap; so are many other materials. Exempting weights that are encased in vinyl misses the point: that lead, due to the total life-cycle impacts associated with its production, manufacturing, and disposal, should not be used frivolously. We urge you to delete the exemption for encased weights.

-- **Fishing Weights:** The restriction on fishing weights focuses on protection of wildlife. EDF has been extensively involved in this issue, most recently through litigation under a TSCA petition we filed in 1992. On June 23, 1993, EDF and EPA agreed to a continuance in that litigation, under which EPA is required to propose a ban on certain fishing weights no later than January 14, 1993.

Table 1. Absorption by rat kidney of lead additives compared with lead acetate.

Lead compound	% absorption
Control (no lead)	4
Metallic lead (particle size 180-250 um)	14
Lead chromate	44
Lead octoate	62
Lead naphthenate	64
Lead sulfide	67
Lead tellurate	121
Lead carbonate (basic)	164

Source: ATSDR, Impact of Lead-Contaminated Soil on Public Health (1992), citing Bartrop and Meek (1975).

In our view, that agreement does not obviate the need for this provision for several reasons. First and foremost, just because EPA has agreed to *start* a TSCA rulemaking on certain fishing weights is no guarantee that the Agency will actually *finish* this undertaking within an appropriate timeframe. Moreover, existence of this provision will help encourage the regulated community to move the process along, rather than delaying it.

Again, it is important to note that non-lead substitutes are readily available. They are in fact already being sold by American Sports International and the Water Gremlin Company. Almost exactly three years ago, the latter company wrote to the members of this Committee stating that production of nonleaded sinkers was possible, though not necessarily easy. We congratulate the company for moving forward with rapid development of an alternative product even in advance of enactment of this bill, and we hope manufacturers of other products covered in this legislation will be inspired to follow their example.

-- **Fittings/Fixtures:** Another product category where substitutes is rapidly becoming available is in plumbing fittings and fixtures. Over two years ago, AT&T researchers unveiled a new lead-free copper alloy for use in plumbing fixtures. At the time the new material was announced, the Vice President of the Copper Development Association acknowledged that it has "remarkable machinability, in some cases exceeding that of the leaded compositions."

Particularly in light of the difficulties that EPA, the states, and municipalities are reportedly encountering in instituting and operating corrosion control programs for drinking water systems, there is no justification for failure to move rapidly away from leaded plumbing fixtures. Market forces do not appear to be accomplishing this objective in a timely or comprehensive way, making legislative action necessary.

-- **Packaging:** Section 403 also prohibits manufacturers and distributors from offering for sale any package or packaging component which intentionally contains lead. Section 403 also sets a limit on the amount of lead which may be incidentally present in packaging or packaging components.

This provision follows the model state legislation developed by CONEG, the Council of North East Governors.⁶ EDF Senior Scientist Dr. Richard Denison served on the advisory board that helped develop that model bill. As of June 17, 1993, CONEG reports that the following states have adopted the legislation:

⁶ The CONEG legislation addresses other toxic heavy metals in addition to lead, including cadmium, mercury, and chromium.

Connecticut, Maine, New Hampshire, Rhode Island, Vermont, New York, New Jersey, Florida, Georgia, Illinois, Iowa, Minnesota, Maryland, Washington, and Wisconsin. In addition, measures are now pending in Massachusetts, Pennsylvania, Michigan, Missouri, and Indiana.

We support inclusion of these provisions in S. 729. As noted above, reducing unnecessary uses of lead in packaging (as elsewhere) reduces a variety of release pathways and exposure sources, some of which are surprising. For example, a recent study reveals that lead paint is currently used on the outside of the soft plastic bread packaging in 17 of the 18 packages tested (Weisel et al. 1991). Not only is there a risk that children may come into contact with the paint if the bag is turned inside-out and reused, but such bags contribute lead to the municipal waste stream. This is a nonsensical use of a toxic heavy metal.

Section 404, Inventory of Lead-Containing Products

EDF also supports section 404, which requires an inventory of existing lead-containing products and pre-manufacture notification of products not on the inventory. This will allow EPA to compile an inventory that comprehensively describes the nature and extent of current lead usage in the United States, information that is presently lacking. Section 404 roughly parallels existing provisions in TSCA for the inventory of chemical substances. (We plan to raise with Committee staff certain technical issues relating to the drafting of the provision, particularly as related to the default list of products of concern.)

The inventory will form the baseline for determining which uses qualify as "new" and thus subject to notification provisions. It is important to note the notification provisions are merely that: a requirement to notify EPA before beginning a new use of lead that might let yet some more of this toxic genie out of the bottle. As a result, EPA will be able to determine whether restrictions on lead usage, in addition to those imposed under section 403, are needed. Although some segments of industry have supplied information to EPA on lead use, there is no legal requirement that all manufacturers do so, and thus no guarantee that the information supplied is in fact current or comprehensive.

Moreover, EPA's current information-gathering activities do not appear to reach all uses of lead. Some uses can best be characterized as frivolous, and certainly unnecessary. For example, a recent gardening catalogue offers for sale clips made of lead for attaching vining plants to trellises.

History teaches us in a most compelling fashion that the lead industry cannot be relied upon to accurately assess the potential for social harm from its products. There's an old saying, "If a mule kicks you once, shame on him. If he kicks you twice, shame on you." A new-use review provision in effect would allow

our society to see, in advance, whether this mule is making a threatening motion before we find ourselves kicked by additional dispersive or unnecessary uses of lead. Put another way, it would give EPA an opportunity to ensure that we won't find ourselves, yet again, in the position of trying to shut the barn door after the aforesaid mule is out. In light of the unacceptable extent of childhood and occupational lead poisoning today, it is an appropriate and necessary measure.

Conclusion

In sum, Mr. Chairman, EDF believes that the provisions of S. 729 will help move our society in the right direction -- one based on avoiding known toxics where substitutes are available. Lead is a paradigm for pollution prevention, both because it is so toxic and because it is already so pervasive.

In closing, we urge the Members of this Committee and other Senators to join in supporting not only this measure but also legislation now being developed by Senator Bradley that will tackle head-on the most severe and intractable aspect of the nation's lead-poisoning problem: the urgent need for adequate resources to abate the serious hazards often found in low-income housing and day care centers. Earlier this month, legislation on this topic was introduced into the House as H.R. 2479. That measure takes a "polluter pays" approach to the problem, by imposing a tax on lead as it is introduced into U.S. commerce (through domestic smelting or import), with the proceeds placed in a dedicated trust fund that will be used solely to abate such hazards. The program will be carried out by states and cities, and administered by the Department of Housing and Urban Development.

The lead trust fund is needed because the current federal deficit makes it extremely unlikely that the necessary resources -- an estimated \$10 billion -- can be made available through general appropriations in the foreseeable future. Absent abatement of these hazards, hundreds of thousands of children will continue to develop moderate-to-severe lead poisoning, resulting in substantial impairment of their intellectual development and ability to become productive citizens. The nation cannot afford this outcome in a global marketplace that is both increasingly competitive and increasingly information-oriented.

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STATEMENT OF U.S. FOOD AND DRUG ADMINISTRATION, PUBLIC HEALTH SERVICE, DEPARTMENT OF HEALTH AND HUMAN SERVICES

Mr. Chairman:

The Food and Drug Administration (FDA) appreciates this opportunity to submit its views for the record on S. 729, the "Lead Exposure Reduction Act of 1993." The bill would amend the Toxic Substances Control Act to reduce the levels of lead in the environment. With respect to FDA, S. 729 would amend the Federal Food, Drug, and Cosmetic Act (FDC Act) to reduce the levels of lead in food packaging and other products regulated by FDA such as ceramicware, crystalware, wine, and bottled water.

This statement will discuss the current responsibilities of FDA regarding the regulation of lead levels in our food supply and FDA's activities related to this regulation as applicable to S. 729.

GENERAL BACKGROUND

Lead is a toxic metal with no known health benefit to humans. This metal, nevertheless, is incorporated into all living organisms through the ubiquitous distribution of lead in the environment (soil, air, and water). Most of the lead to which we are exposed stems from man's activities. Industrial emissions, effluents and discharges, by-products from the use of leaded gasoline, as well as some community water supplies, have been continuous sources of lead contamination in the environment.

A certain amount of lead is inevitably consumed in the food we eat, since both crops and animals are contaminated from environmental sources. Lead can also enter the food supply from non-environmental sources such as food processing equipment, lead solder in cans, and leaching from ceramicware and crystalware. The presence of lead in foods has been of concern to FDA throughout this century.

Lead accumulates in the human body gradually over a lifetime, residing primarily in bones, with smaller amounts accumulating in soft tissue. The risk to infants and children and to the developing fetus is of major concern because they are more susceptible to the effects of lead than adults. There is growing evidence that lead affects growth and can cause learning and behavioral disorders in children even at low levels once thought to be acceptable. Scientific evidence, however, indicates that although the lead levels in blood in the U.S. population have been reduced in recent years, levels are still elevated relative to less industrialized societies.

HISTORICAL OVERVIEW OF LEAD EXPOSURE REDUCTION

Over the years, various Federal agencies have tried to minimize public exposure to lead. FDA's interest in the health risk due to lead dates from the enactment of the Food and Drugs Act of 1906. In the 1930's FDA devoted considerable research and regulatory resources to control lead residues resulting from the spraying of lead-containing pesticides on fruits and vegetables. In 1934, FDA performed analytical research to investigate the effect of storage on the lead content of evaporated milk. FDA developed methods for detecting and measuring lead in foods in 1934 and 1935.

FDA ACTIVITIES CONCERNING LEAD

FDA currently has a number of programs to monitor and reduce the amount of lead in the food supply.

Lead Solder in Food Cans

FDA launched its major lead control initiative in the 1970's, the goal of which was the reduction of lead in canned foods, which at one time contributed about one-third of the lead which the average person obtained from food. Through a cooperative effort between FDA and the canning industry, the number of food cans containing lead solder has been reduced voluntarily. At this time, approximately 4 percent of the food cans available to U.S. consumers contain lead solder, all of which are imported. According to the Can Manufacturing Institute, there are now no American-made food cans containing lead solder. To eliminate this source of exposure to lead, FDA has recently proposed to ban the use lead solder in cans used for packaging foods, including all imported foods.

Total Diet Study

FDA's Total Diet Study is designed to estimate the dietary intakes of various nutrients and contaminants, including lead, for 14 age/sex groups, from infants to senior citizens. Each year, FDA personnel purchase "market baskets" of 234 food items each, that typify the American diet. These market baskets are bought from local supermarkets or grocery stores just as a shopper would do, four times per year

throughout the United States. The foods are prepared table ready and then are analyzed for essential nutrients and various contaminants, including toxic metals, pesticides, radionuclides, and industrial chemicals. The findings from these analyses, coupled with data on the amounts of these foods consumed, permit the Agency to calculate the dietary intakes of contaminants by a variety of different population groups based on age and gender. The Total Diet data allow FDA to estimate the amount of lead consumed in foods as they are customarily eaten.

For example, according to data from the 1982 Total Diet Study, the average lead intake for children weighing 9 kg (6-11 months old) was 15.5 micrograms per day; for children weighing 13 kg (2 years old) the average daily lead intake was 25.2 micrograms. The Total Diet Study data reveal that by 1988-89 the average lead intake had dropped for these two groups to 4.8 micrograms and 5.0 micrograms per day, respectively. Thus, data from the Total Diet Study indicate that from 1982 to the present, dietary lead intake has declined markedly, primarily due to reduction of lead solder in food cans.

Lead in Ceramicware

FDA is also responsible for evaluating the safety of materials that come into contact with foods. Lead has been a component in glazing materials used for ceramic dishes, bowls, pitchers, plates, and other earthenware for centuries, and most ceramicware products sold in the United States today are coated with glazes that contain lead. A glaze is a thin coating that is applied and fused onto a shaped body of clay. A glaze containing lead has to be heated, or fired, to a high enough temperature for a sufficient length of time to be sure it is safe. If glazes are properly formulated, applied, and fired, the final product will not release excessive levels of lead into foods contained in the ware. However, lower quality or improperly fired glazes used on ceramicware can release unacceptably high levels of lead into foods contacting the ceramicware.

The principal danger to consumers is posed by ceramicware products that are improperly formulated or fired, especially if they are used to store acidic foods. If the ceramicware is improperly manufactured, the acid in foods can accelerate the leaching of lead from the ware. FDA became aware of the problem of lead migration into food from pottery glazes in 1969 after a California family suffered severe lead poisoning from drinking orange juice stored in a pitcher purchased in Mexico.

Following a survey in 1970 of imported pottery in which were found high levels of lead migration into food-simulating acidic solutions, FDA issued a compliance program in May 1971 to monitor foreign and domestic pottery for leachable lead. Under this program, FDA has inspected factories and analyzed samples from every major domestic manufacturer of ceramic dinnerware. The products of domestic manufacturers have exceeded the limits for lead leaching, (at which FDA considers regulatory action appropriate), at a relatively low rate. The Agency also routinely samples imported ceramicware. The violation rate for these products has been higher than that for domestic items. Items with too high lead levels are denied entry into the United States.

In 1971, FDA also established a level for release of lead from ceramic foodware that was of regulatory concern. That level was 7 parts per million (ppm). FDA has since lowered the levels it uses in 1980 based upon recommendations from the World Health Organization, and the levels now vary according to the size and use of the product, and the potential for exposure to population groups at risk. For example, the action level of 0.5 ppm for leachable lead from ceramicware pitchers is based on potential exposure in children who may drink orange juice, an acidic beverage which leaches greater levels of lead than non-acidic beverages, stored in the ceramicware pitcher.

Finally, as further protection for consumers, FDA is considering adoption of a final rule that would clearly demarcate ceramicware that is intended only to be decorative and that is not for food use. Attached is a list of regulatory limits for lead in various products under FDA jurisdiction.

Lead in Crystalware

FDA has worked with the International Crystalware Federation, a consortium representing a majority of crystalware manufacturers, in an attempt to achieve a reduction in the leachable lead from crystal goblets and decanters. As a result, crystalware manufacturers agreed to share data on technological developments to reduce leachable lead levels in crystal. Crystalware manufacturers also have voluntarily established standards for leachable lead levels from crystalware and are mon-

itoring for compliance with these standards by conducting analytical trials to detect violative patterns.

Lead in Wine

In conjunction with the Bureau of Alcohol, Tobacco, and Firearms, FDA has worked to ensure that the level of lead in wine does not exceed 300 parts per billion (ppb). This level was arrived at based on an assessment of the potential for exposure by women of childbearing age. FDA believes this level will provide a means of providing protection to consumers of large volumes of wine that may contain sufficient lead to place them at risk from nondevelopmental effects. The Agency is reviewing data that seem to suggest that this limit for lead in wine should be reduced further, and thus, provide even greater protection to women of childbearing age.

Other FDA Lead Reduction Activities

FDA is also moving to reduce lead levels in food additives and calcium supplements. FDA is preparing an advance notice of proposed rulemaking to obtain comment on the extent to which the lead levels in the food additives listed in the proposal can be reduced by use of Good Manufacturing Practices (GMPs). This list was developed following a food additive review to assess the impact of the population's total exposure to the additive and the average amount the lead contributed by this exposure.

FDA also has proposed a maximum allowable limit of 5.0 ppb for lead in bottled water. Since the source of most lead in water is from plumbing systems, manufacturers can control lead in bottled water through GMPs. Many individuals are replacing or supplementing their normal fluid intake with bottled water, so the imposition of this limit on lead in bottled water should assist individuals in reducing their total daily exposure to lead.

For the Subcommittee's information, a chronology of FDA's activities regarding lead is attached.

S. 729

FDA supports the goal of S. 729 and the efforts of Congress to reduce sources of lead contamination in the environment and, thereby, human exposure to lead. We defer to the Environmental Protection Agency (EPA) regarding the overall direction of the legislation and provisions that would give EPA authority with respect to reduction of lead contamination in the environment. As previously discussed, FDA's efforts are already directed at the reduction of the same sources of lead as those addressed in S. 729. FDA believes that its actions may mitigate the need for legislation. FDA also believes that the timeframes proposed in S. 729 for development of regulations are unreasonable in light of the procedures required for this process, because in some instances formal rulemaking (which involves a hearing and stay of the effect of the regulation until a final decision in the rulemaking is reached) would be required. We would suggest giving the Agency the option to use an informal rulemaking procedure which would expedite the development of these regulations.

Conclusion

FDA is committed to assuring a safe food supply and will continue to pursue all avenues to remove controllable lead from the American diet.

FDA supports the goals of S. 729 and the efforts of Congress to reduce any harmful exposure to lead in the environment. FDA already has been taking actions to minimize or prevent exposure to lead from sources under the jurisdiction of the FDC Act. We believe our efforts over the years already have substantially reduced lead levels in our diet, and we are actively seeking ways to reduce those levels further. These efforts are directed at some of the same sources as those identified in S. 729.

CHRONOLOGICAL OUTLINE OF FDA LEAD ACTIVITIES

- 1930 Initiated enforcement program on lead-based pesticides in fruits and vegetables.
- 1934-5 Developed new methods for the measurement of lead in food.
- 1962 Public Health Service set drinking water standard of 50 ppb lead (3/6/62).
- 1970 Surveyed leachable lead in imported ceramicware.
- 1971 Set action level of 7 ppm of lead from ceramicware to special leaching solution. Worked with industry on self-surveillance programs to limit lead migration.

- 1971+ Added enamelware and pewter to existing Compliance Policy Guide (CPG).
- 1971+ Added silver-plated hollowware to existing CPG.
- 1971+ Set action level of 0.5 ppm leachable lead for silverplated cups intended for use by infants.
- 1971 Ad Hoc Health, Education, and Welfare (HEW) Committee of Experts on Pediatric Lead establish guideline of 300 micrograms (mcg)/day for infants as the maximum daily exposure to lead for children aged 1-3 years.
- 1973 Began analysis for lead in Total Diet Study.
- 1973 50 ppb limit of lead set for bottled water (11/26/73).
- 1977 Ad Hoc HEW Committee recommended total lead exposure not to exceed 100 mcg/day for infants under 6 months and 150 mcg/day for children 6 months to 2 years.
- 1978 FDA notice of guidelines on lead and cadmium in decorated glass tumblers.
- 1978 Lead acetate permanently listed as a color additive for hair dyes.
- 1979 Published plan to reduce lead content of canned foods by 50%.
- 1979 Infant juice and infant food manufacturers completed voluntary switch from lead soldered cans to glass jars.
- 1979 Published Memorandum of Understanding (MOU) with EPA and USDA for a study on background concentrations of cadmium, lead, and other selected metals in soils and crops in major production areas (44 CFR 44940).
- 1979 Action levels for lead in ceramicware foodware (mcg lead per mL leaching solution) set for: flatware—7; small hollowware—5.0; large hollowware—2.5 mcg lead.
- 1982 Joint EPA, FDA, and USDA Statement of Federal Policy and Guidance published on Land Application of Municipal Sewage Sludge for the Protection of Fruits and Vegetables.
- 1982 Study finds lead in bone meal up to 12.8 ppm.
- 1985 Evaporated milk industry in U.S. completed conversion to non-lead soldered cans. FDA conducted evaporated milk survey.
- 1988 Congressional hearing on lead in housewares (6/27/88).
- 1988 MOU formalized with China (PRC) providing for certification by the Chinese Government that lead leaching from ceramicware is below the FDA action level.
- 1989 Published a provisional tolerable intake for food of 6-18 mcg/day for 10 kg child. Proposed a regulatory limit for ceramic pitchers of 0.1 mcg/mL (25 to 50 times lower than current action level).
- 1989 Began investigation based on limited data that some coffee urns may release significant amounts of lead.
- 1990 Reevaluated approaches to control leachable lead in other ceramicware such as cookware and flatware.
- 1990 Evaluated the value to public health of eliminating the use of lead in solder for food cans.
- 1992 Published notice of new CPG for leachable lead in ceramicware (7/6/92).
- 1992 Proposed rule to ban foils in lead wine seals (11/25/92)
- 1993 Proposed rule to ban lead solder in all food cans (6/21/93)

ACTION LEVELS FOR LEAD IN PRODUCTS UNDER FDA JURISDICTION

WINE—300 parts per billion

LARGE HOLLOWWARE—1 part per million

SMALL HOLLOWWARE—2 parts per million

FLATWARE—3 parts per million

HOT BEVERAGE MUGS/PITCHERS—.5 parts per million

PROPOSED LIMITS FOR LEAD IN PRODUCTS UNDER FDA JURISDICTION

BOTTLED WATER—5 parts per billion

LEAD FOIL SEALS/LEAD SOLDER CANS—0 parts per million

103D CONGRESS
1ST SESSION

S. 729

To amend the Toxic Substances Control Act to reduce the levels of lead in the environment, and for other purposes.

IN THE SENATE OF THE UNITED STATES

APRIL 1 (legislative day, MARCH 3), 1993

Mr. REID (for himself, Mr. BRADLEY, Mr. LIEBERMAN, Mr. BRYAN, Mr. HARKIN, Mr. JEFFORDS, Mr. SIMON, Mr. KENNEDY, Mr. LEAHY, Mr. LAUTENBERG, Ms. MIKULSKI, Ms. MOSELEY-BRAUN, Mr. MOYNIHAN, Mr. PELL, Mr. SARBANES, Mr. WELLSTONE, and Mr. WOFFORD) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

A BILL

To amend the Toxic Substances Control Act to reduce the levels of lead in the environment, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

4 (a) SHORT TITLE.—This Act may be cited as the
5 “Lead Exposure Reduction Act of 1993”.

6 (b) TABLE OF CONTENTS.—The table of contents of
7 this Act is as follows:

Sec. 1. Short title; table of contents.

TITLE I—LEAD ABATEMENT

2

- Sec. 101. Findings and policy.
- Sec. 102. Definitions.
- Sec. 103. Restrictions on continuing uses of certain lead-containing products.
- Sec. 104. Inventory of lead-containing products and new use notification procedures.
- Sec. 105. Product labeling.
- Sec. 106. Recycling of lead-acid batteries.
- Sec. 107. Lead contamination in schools and day care facilities.
- Sec. 108. Blood-lead and other abatement and measurement programs.
- Sec. 109. Establishment of National Centers for the Prevention of Lead Poisoning.
- Sec. 110. Conforming amendments.
- Sec. 111. Amendment to table of contents.

TITLE II—MISCELLANEOUS

- Sec. 201. Reporting of blood-lead levels; blood-lead laboratory reference project.
- Sec. 202. Update of 1988 report to Congress on childhood lead poisoning.
- Sec. 203. Additional conforming amendments.

TITLE III—AUTHORIZATION OF APPROPRIATIONS

- Sec. 301. Authorization of appropriations.

1 (c) REFERENCE TO TOXIC SUBSTANCES CONTROL
 2 ACT.—Wherever in title I an amendment or repeal is ex-
 3 pressed in terms of an amendment to, or repeal of, a sec-
 4 tion or other provision, the reference shall be considered
 5 to be made to a section or other provision of the Toxic
 6 Substances Control Act (15 U.S.C. 2601 et seq.), except
 7 to the extent otherwise specifically provided.

8 **TITLE I—LEAD ABATEMENT**9 **SEC. 101. FINDINGS AND POLICY.**

10 (a) REDESIGNATIONS.—Sections 401 and 402
 11 through 412 (15 U.S.C. 2681 and 2682 through 2692)
 12 are redesignated as sections 402, and 410 through 420,
 13 respectively.

1 (b) FINDINGS AND POLICY.—Title IV (15 U.S.C.
2 2681 et seq.) is amended by inserting before section 402
3 (as so redesignated) the following new section:

4 **"SEC. 401. FINDINGS AND POLICY.**

5 "(a) FINDINGS.—Congress finds that—

6 "(1) lead poisoning is the most prevalent dis-
7 ease of environmental origin among American chil-
8 dren today, and children under 7 years of age are
9 at special risk because of their susceptibility to the
10 potency of lead as a neurologic toxin;

11 "(2)(A) the effects of lead on children may in-
12 clude permanent and significant neurologic and
13 physiologic impairment; and

14 "(B) additional health effects occur in adults
15 exposed to similar exposure levels;

16 "(3) because of the practical difficulties of re-
17 moving lead already dispersed into the environment,
18 children and adults will continue to be exposed to
19 lead for years;

20 "(4) as a result of decades of highly dispersive
21 uses of lead in a variety of products, contamination
22 of the environment with unacceptable levels of lead
23 is widespread; and

24 "(5) the continued manufacture, import, proc-
25 essing, use, and disposal of some lead-containing

1 products may cause further releases of lead into the
2 environment, and the releases contribute to further
3 environmental contamination and resultant exposure
4 to lead.

5 “(b) POLICY.—It is the policy of the United States
6 that further releases of lead into the environment should
7 be minimized, and methods should be developed and imple-
8 mented to reduce sources of lead that result in adverse
9 human or environmental exposures.”.

10 **SEC. 102. DEFINITIONS.**

11 Section 402, as redesignated by section 101(a) of this
12 Act, is amended—

13 (1) by striking “For the purposes” and insert-
14 ing “(a) IN GENERAL.—Subject to subsection (b),
15 for the purposes”;

16 (2) by redesignating—

17 (A) paragraphs (13) through (17) as para-
18 graphs (18) through (22), respectively;

19 (B) paragraphs (5) through (12) as para-
20 graphs (7) through (14), respectively; and

21 (C) paragraph (4) as paragraph (5);

22 (3) by inserting after paragraph (3) the follow-
23 ing new paragraph:

1 “(4) DISTRIBUTOR.—The term ‘distributor’
2 means any individual, firm, corporation, or other en-
3 tity that takes title to goods purchased for resale.”;

4 (4) by inserting after paragraph (5) (as so re-
5 designated) the following new paragraph:

6 “(6) FACILITY.—The term ‘facility’ means any
7 public or private dwelling constructed before 1980,
8 public building constructed before 1980, commercial
9 building, bridge, or other structure or super-
10 structure.”;

11 (5) by inserting after paragraph (14) (as so re-
12 designated) the following new paragraphs:

13 “(15) PACKAGE.—The term ‘package’ means a
14 container that provides a means of marketing, pro-
15 tecting, or handling a product. The term includes a
16 unit package, an intermediate package, a crate, a
17 pail, a rigid foil, unsealed receptacle (such as a car-
18 rying case), a cup, tray, wrapper or wrapping film,
19 a bag, tub, shipping or other container, any package
20 included in the American Society for Testing and
21 Materials (referred to in this title as ‘ASTM’) Speci-
22 fication D-996, and such other packages as the Ad-
23 ministrator may specify by regulation.

24 “(16) PACKAGING COMPONENT.—The term
25 ‘packaging component’ means any individual assem-

1 bled part of a package (including any interior or ex-
2 terior blocking, bracing, cushioning, weatherproof-
3 ing, exterior strapping, coating, closure, ink, or
4 label). For the purposes of this title, tin-plated steel
5 that meets the ASTM Specification A-623 shall be
6 deemed an individual packaging component.

7 “(17) PERSON.—The term ‘person’ means an
8 individual, trust, firm, joint stock company, corpora-
9 tion (including a government corporation), partner-
10 ship, association, State, municipality, commission,
11 political subdivision of a State, or interstate body.
12 The term shall include each department, agency, or
13 instrumentality of the United States.”; and

14 (6) by adding at the end the following new sub-
15 section:

16 “(b) EXCEPTIONS.—As used in this title, the terms
17 ‘package’ and ‘packaging component’ shall not include—

18 “(1) ceramic ware or crystal;

19 “(2) a container used for radiation shielding;

20 “(3) any casing for a lead-acid battery;

21 “(4) steel strapping; or

22 “(5) any package or packaging component con-
23 taining lead that is regulated or subject to regula-
24 tion under the Federal Food, Drug, and Cosmetic
25 Act (21 U.S.C. 301 et seq.).”.

1 **SEC. 103. RESTRICTIONS ON CONTINUING USES OF CER-**
2 **TAIN LEAD-CONTAINING PRODUCTS.**

3 Title IV (15 U.S.C. 2681 et seq.), as amended by
4 section 101 of this Act, is further amended by inserting
5 after section 402, as redesignated by section 101(a) of this
6 Act, the following new section:

7 **"SEC. 403. RESTRICTIONS ON CONTINUING USES OF CER-**
8 **TAIN LEAD-CONTAINING PRODUCTS.**

9 **"(a) GENERAL RESTRICTIONS.—**

10 **"(1) IN GENERAL.—**

11 **"(A) PROHIBITION ON THE IMPORT, MAN-**
12 **UFACTURING, OR PROCESSING OF A PROD-**
13 **UCT.—**Beginning on the date that is 1 year
14 after the date of enactment of this section, no
15 person may import, manufacture, or process a
16 product in any of the product categories de-
17 scribed in paragraph (2).

18 **"(B) PROHIBITION ON THE DISTRIBUTION**
19 **IN COMMERCE OF A PRODUCT.—**Beginning on
20 the date that is 2 years after the date of enact-
21 ment of this section, no person may distribute
22 in commerce a product in any of the product
23 categories described in paragraph (2).

24 **"(2) PRODUCT CATEGORIES.—**The product cat-
25 egories described in this paragraph are as follows:

1 “(A) Paint containing more than 0.06 per-
2 cent lead by dry weight, other than—

3 “(i) corrosion inhibitive coatings, in-
4 cluding electrocoats and electrodeposition
5 primers, applied by original equipment
6 manufacturers to motor vehicle parts and
7 containing no more than 1.9 percent lead
8 by weight in dry film;

9 “(ii) certain paints and primers for
10 equipment used for agricultural, construc-
11 tion, general, and industrial forestry pur-
12 poses; and

13 “(iii) paints containing lead chromate
14 pigments.

15 “(B) Pesticides (as defined in section 2(u)
16 of the Federal Insecticide, Rodenticide, and
17 Fungicide Act (7 U.S.C. 136(u)) containing
18 more than 0.1 percent lead by dry weight.

19 “(C) Toys and recreational game pieces
20 containing more than 0.1 percent lead by dry
21 weight, except for toys and games that contain
22 electronic or electrical parts or components and
23 that meet the standards and regulations for
24 content, manufacture, processing, and distribu-
25 tion established by the Consumer Product Safe-

1 ty Commission under the Federal Hazardous
2 Substances Act (15 U.S.C. 1261 et seq.).

3 “(D) Curtain weights—

4 “(i) that are not encased in vinyl;

5 “(ii) that contain more than 0.1 per-
6 cent lead by dry weight; and

7 “(iii) that are common in residential
8 use.

9 “(E) Fishing weights, jigs, and lures, other
10 than lures that are artificial flies, containing
11 more than 0.1 percent lead by dry weight.

12 “(F) Inks containing more than 0.1 per-
13 cent lead by dry weight used in printing news-
14 papers, newspaper supplements, or magazines
15 published more than once per month.

16 “(G) Brick mortar containing more than 2
17 percent lead by dry weight.

18 “(3) GLASS COATINGS.—

19 “(A) IN GENERAL.—Beginning on the date
20 that is 5 years after the date of enactment of
21 this section, no person may import, manufac-
22 ture, or process a product in any of the follow-
23 ing product categories, and beginning on the
24 date that is 6 years after the date of enactment
25 of this section, no person may distribute in

1 commerce a product in any of the product cat-
 2 egories described in subparagraph (B).

3 “(B) PRODUCT CATEGORIES.—The prod-
 4 uct categories described in this subparagraph
 5 are as follows:

6 “(i) Architectural glass coatings con-
 7 taining more than 0.06 percent lead by dry
 8 weight.

9 “(ii) Automotive window coatings con-
 10 taining more than 0.06 percent lead by dry
 11 weight.

12 “(iii) Mirror backings containing more
 13 than 0.06 percent lead by dry weight.

14 “(4) STATUTORY CONSTRUCTION.—Nothing in
 15 this section shall prohibit the recycling of any prod-
 16 uct listed in this subsection if, following the original
 17 use of the product, the product is reused as a raw
 18 material in the manufacture of any product that is
 19 not listed under this subsection.

20 “(b) MODIFICATION OF RESTRICTIONS.—

21 “(1) IN GENERAL.—The Administrator may,
 22 after public notice and opportunity for comment,
 23 promulgate regulations to modify, pursuant to para-
 24 graphs (2) and (3), the percentage of the allowable
 25 lead content for a product, or a group of products,

1 within a product category described in subpara-
2 graphs (A) through (G) of subsection (a)(2) and
3 subparagraphs (A) through (C) of subsection (a)(3).

4 “(2) REDUCED PERCENTAGE.—The Adminis-
5 trator may, pursuant to paragraph (1), establish by
6 regulation a percentage by dry weight of the allow-
7 able lead content that is less than the percentage
8 specified under subsection (a) (including
9 nondetectable levels) for a product, or a group of
10 products, within any product category described in
11 subparagraphs (A) through (G) of subsection (a)(2)
12 and subparagraphs (A) through (C) of subsection
13 (a)(3) if the Administrator determines that a reduc-
14 tion in the percentage of the allowable lead content
15 is necessary to protect human health or the environ-
16 ment.

17 “(3) INCREASED PERCENTAGE.—

18 “(A) IN GENERAL.—The Administrator
19 may, pursuant to paragraph (1), establish by
20 regulation a percentage by dry weight of the al-
21 lowable lead content that is greater than the
22 percentage specified under subsection (a) for a
23 product, or a group of products, within any
24 product category described in subparagraphs
25 (A) through (G) of subsection (a)(2) and sub-

1 paragraphs (A) through (C) of subsection
2 (a)(3) if the Administrator determines that an
3 increase in the percentage of the allowable lead
4 content will promote the protection of human
5 health or the environment.

6 “(B) TERMINATION DATE.—If the Admin-
7 istrator establishes by regulation an increased
8 percentage of the allowable lead content for a
9 product, or a group of products, within a prod-
10 uct category pursuant to this paragraph, the
11 regulation establishing the percentage shall ter-
12 minate on the date that is 6 years after the
13 date the regulation becomes final.

14 “(C) REVIEW.—Not later than 2 years
15 prior to the termination date of a regulation
16 promulgated under this paragraph, the Admin-
17 istrator shall review the regulation. If the Ad-
18 ministrator determines, pursuant to subpara-
19 graph (A), that the promulgation of a revised
20 regulation is appropriate, the Administrator,
21 not later than 1 year prior to the termination
22 date of the regulation, may promulgate a re-
23 vised regulation that shall terminate on the
24 date that is 6 years after the date the revised
25 regulation becomes final.

1 “(4) WAIVERS FOR TOYS AND RECREATIONAL
2 GAME PIECES.—Not later than 1 year after the date
3 of enactment of this section, the Administrator shall
4 promulgate regulations to waive the requirements of
5 subsection (a)(2)(C) with respect to certain toys and
6 recreational game pieces that are collectible items
7 and scale models intended for adult acquisition.

8 “(5) EXEMPTION OF PAINTS.—

9 “(A) DETERMINATION.—

10 “(i) IN GENERAL.—Not later than 5
11 years after the date of enactment of this
12 section, the Administrator shall determine,
13 following public notice and opportunity for
14 comment, whether there is—

15 “(I) 1 (or more) primer paint
16 suitable for use as an electrocoat or
17 electrodeposition primer (or both) on
18 motor vehicle parts that contains less
19 than 1.9 percent lead by weight in dry
20 film;

21 “(II) 1 (or more) original equip-
22 ment manufacturer paint, primer, or
23 service paint or primer for equipment
24 used for agricultural, construction,
25 and general industrial and forestry

14

1 purposes that, in the dry coating, has
2 a lead solubility of less than 60 milli-
3 grams per liter, as described in the
4 American National Standards Insti-
5 tute (referred to in this subtitle as
6 'ANSI') standard Z66.1; or

7 "(III) 1 (or more) substitute for
8 paints containing lead chromate pig-
9 ments for use in any class or category
10 of uses that contains less than or
11 equal to 0.06 percent lead by weight
12 in dry film.

13 "(ii) ADDITIONAL DETERMINATION BY
14 ADMINISTRATOR.—The Administrator also
15 shall determine whether 1 (or more) paint
16 or primer referred to in clause (i)—

17 "(I) has substantially equivalent
18 corrosion inhibition and related per-
19 formance characteristics to any paint
20 or primer; and

21 "(II) does not pose a greater risk
22 to human health and the environment
23 than a paint or primer,

1 in use for the applicable purpose specified
2 in clause (i) on the date of enactment of
3 this section.

4 “(B) IDENTIFICATION.—If the Adminis-
5 trator determines pursuant to subparagraph
6 (A), that 1 (or more) of the paints and primers
7 referred to in subparagraph (A) meets the ap-
8 plicable specifications under such subparagraph,
9 the Administrator shall identify the lead con-
10 tent of the paint or primer of each applicable
11 category of paints or primers (or both) under
12 subclauses (I) through (III) of subparagraph
13 (A)(i).

14 “(C) PROHIBITION ON IMPORTATION, MAN-
15 UFACTURING, AND PROCESSING.—For a cat-
16 egory of paints or primers (or both) referred to
17 in subparagraph (B), beginning on the date
18 that is 3 years after the Administrator makes
19 a determination under subparagraph (B), no
20 person shall import, manufacture, or process
21 any paint or primer with a lead content that ex-
22 ceeds the level identified by the Administrator
23 pursuant to subparagraph (B).

24 “(D) PROHIBITION ON DISTRIBUTION IN
25 COMMERCE.—For a category of paints or prim-

1 ers (or both) referred to in subparagraph (B),
2 beginning on the date that is 4 years after the
3 Administrator makes a determination under
4 subparagraph (B), no person shall—

5 “(i) distribute in commerce any paint
6 or primer with a lead content that exceeds
7 the level identified by the Administrator; or

8 “(ii) import, manufacture, or process
9 any motor vehicle or motor vehicle part or
10 new equipment part coated with the paint
11 or primer with a lead content that exceeds
12 the level identified by the Administrator.

13 “(E) EFFECT OF NEGATIVE DETERMINA-
14 TION.—If the Administrator determines, pursu-
15 ant to subparagraph (A), that there is no paint
16 or primer suitable for a use referred to in
17 subclause (I), (II), or (III) of subparagraph
18 (A)(i) that meets the applicable requirements
19 under subparagraph (A)—

20 “(i) beginning on the date that is 13
21 years after the date of enactment of this
22 section, no person shall import, manufac-
23 ture, or process any paint or primer for
24 the use specified in the determination pur-
25 suant to subparagraph (A); and

17

- 1 “(ii) beginning on the date that is 14
2 years after the date of enactment of this
3 section, no person shall distribute in com-
4 merce any paint or primer for the use
5 specified in the determination pursuant to
6 subparagraph (A) (or import, manufacture,
7 or process any motor vehicle or motor vehi-
8 cle part or new equipment part coated with
9 the paint or primer),
10 that contains a lead content that exceeds a level
11 of lead content that the Administrator shall de-
12 termine, on the basis of the identification of the
13 lead content of paints and primers for the use.
14 “(c) STATEMENTS BY THE ADMINISTRATOR RELAT-
15 ING TO MODIFICATIONS OF RESTRICTIONS.—In promul-
16 gating any regulation under subsection (b) with respect
17 to the allowable lead content for a product, or a group
18 of products, under a product category, the Administrator
19 shall, prior to the promulgation of a final regulation, con-
20 sider and publish a statement that describes the effects
21 of the proposed allowable lead content level for the prod-
22 uct, or group of products, under the product category on
23 human health and the environment.
24 “(d) LEAD SOLDER.—

1 “(1) IN GENERAL.—Not later than 2 years
2 after the date of enactment of this section, the Ad-
3 ministrator shall promulgate regulations to ban the
4 manufacture, importation, processing, sale, and dis-
5 tribution in commerce of lead solders commonly used
6 in plumbing systems, including lead solder that con-
7 tains 50 percent tin and 50 percent lead (50–50 tin-
8 lead solder) and lead solder that contains 85 percent
9 tin and 15 percent lead (85–15 tin-lead solder).

10 “(2) RESTRICTIONS ON SALE AND DISPLAY.—
11 Not later than 2 years after the date of enactment
12 of this section, the Administrator shall promulgate
13 regulations to restrict the sale and display of lead
14 solders not commonly used in plumbing systems,
15 including—

16 “(A) a prohibition on the sale or display of
17 the solders in the plumbing supply section of
18 any retail establishment;

19 “(B) a restriction on the sale or display of
20 the solders in any wholesale establishment;

21 “(C) a prohibition on the sale or display of
22 the solders in proximity to plumbing materials
23 in any establishment; and

1 “(D) a requirement that each of the sol-
2 ders be labeled to indicate that the solder is not
3 intended for use in plumbing systems.

4 “(e) PLUMBING FITTINGS AND FIXTURES.—

5 “(1) IN GENERAL.—Not later than 2 years
6 after the date of enactment of this section, the Ad-
7 ministrator shall promulgate regulations to establish
8 a health-effects based performance standard that es-
9 tablishes minimal leaching levels of lead from new
10 plumbing fittings and fixtures that convey drinking
11 water.

12 “(2) CONSEQUENCES OF FAILURE TO MEET RE-
13 QUIREMENTS.—If the requirements of paragraph (1)
14 are not met—

15 “(A) by the date that is 4 years after the
16 date of enactment of this section, no person
17 may import, manufacture, process, or distribute
18 in commerce a plumbing fitting or fixture that
19 contains more than 7 percent lead by dry
20 weight;

21 “(B) by the date that is 5 years after the
22 date of enactment of this section, no person
23 may import, manufacture, process, or distribute
24 in commerce a plumbing fitting or fixture that

1 contains more than 6 percent lead by dry
2 weight;

3 “(C) by the date that is 6 years after the
4 date of enactment of this section, no person
5 may import, manufacture, process, or distribute
6 in commerce a plumbing fitting or fixture that
7 contains more than 5 percent lead by dry
8 weight; or

9 “(D) by the date that is 7 years after the
10 date of enactment of this section, no person
11 may import, manufacture, process, or distribute
12 in commerce a plumbing fitting or fixture that
13 contains more than 4 percent lead by dry
14 weight.

15 “(f) PACKAGING.—

16 “(1) DEFINITIONS.—As used in this subsection:

17 “(A) INCIDENTAL PRESENCE.—The term
18 ‘incidental presence’ means the presence of lead
19 in a package or packaging component that was
20 not purposely introduced into the package or
21 packaging component for the properties or
22 characteristics of the lead.

23 “(B) INTENTIONALLY INTRODUCE.—The
24 term ‘intentionally introduce’ means to purpose-
25 fully introduce lead into a package or packaging

21

1 component with the intent that the lead be
2 present in the package or packaging component.

3 The term does not include—

4 “(i) the presence of background levels
5 of lead that naturally occur in raw mate-
6 rials or are present as postconsumer addi-
7 tions, and that are not purposefully added
8 to perform as part of a package or packag-
9 ing component; and

10 “(ii) any trace amounts of a process-
11 ing aid or similar material that is—

12 “(I) used to produce a product
13 from which a package or packaging
14 component is manufactured; and

15 “(II) reasonably expected to be
16 consumed or transformed into a mate-
17 rial that is not regulated under this
18 title during the process.

19 “(2) INTENTIONAL INTRODUCTION.—Beginning
20 on the date that is 4 years after the date of enact-
21 ment of this section—

22 “(A) no package or packaging component
23 shall be sold or distributed in commerce by a
24 manufacturer or distributor; and

1 “(B) no product shall be distributed in
2 commerce by the manufacturer or distributor of
3 the product in a package,
4 if the product includes, in the package, or in any
5 packaging component, any ink, dye, pigment, adhe-
6 sive, stabilizer, or other additive to which lead has
7 been intentionally introduced as an element during
8 manufacturing or distribution (as opposed to the in-
9 cidental presence of lead).

10 “(3) LIMITATIONS ON THE AGGREGATE OF
11 CONCENTRATION LEVELS FROM INCIDENTAL PRES-
12 ENCE OF LEAD.—Notwithstanding paragraph (2),
13 the aggregate of the concentration levels from any
14 incidental presence of lead present in any package or
15 packaging component, other than the lead originat-
16 ing from the product contained in the package, shall
17 not exceed—

18 “(A) for the fifth 1-year period after the
19 date of enactment of this section, 600 parts per
20 million by weight (0.06 percent);

21 “(B) for the sixth 1-year period after the
22 date of enactment of this section, 250 parts per
23 million by weight (0.025 percent); and

24 “(C) for the seventh 1-year period after
25 the date of enactment of this section, and for

1 each 12-month period thereafter, 100 parts per
2 million by weight (0.01 percent).

3 “(4) PROHIBITION.—No package or packaging
4 component shall be sold or distributed in commerce
5 by a manufacturer or distributor, and no product
6 shall be sold or distributed in commerce in a pack-
7 age by a manufacturer or distributor, if the package
8 or packaging component exceeds the applicable level
9 provided under paragraph (3).

10 “(5) CERTIFICATE OF COMPLIANCE.—

11 “(A) IN GENERAL.—A certificate of com-
12 pliance stating that a package or packaging
13 component is in compliance with the require-
14 ments of this section shall be prepared and re-
15 tained by the manufacturer or distributor of the
16 package or packaging component.

17 “(B) STATEMENT RELATING TO EXEMP-
18 TION.—In any case in which compliance with
19 this section is based on an exemption under
20 paragraph (6), the certificate shall state the
21 specific basis upon which the exemption is
22 claimed.

23 “(C) SIGNATURE OF AUTHORIZED OFFI-
24 CIAL.—A certificate of compliance shall be
25 signed by an authorized official of the manufac-

1 turer or distributor referred to in subparagraph
2 (A).

3 “(6) EXEMPTION FROM PACKAGING REQUIRE-
4 MENTS.—Prior to the expiration of the 7-year period
5 beginning on the date of enactment of this section,
6 on receipt of an application (in such form and con-
7 taining such information as the Administrator may
8 prescribe by regulation), the Administrator may ex-
9 empt from the requirements of paragraph (2), (3) or
10 (4)—

11 “(A) a package or packaging component
12 manufactured prior to the date of enactment of
13 this section, as determined by the Adminis-
14 trator; and

15 “(B) a package or packaging component to
16 which lead has been added in the manufactur-
17 ing, forming, printing, or distribution process in
18 order to comply with health or safety require-
19 ments of Federal law or the law of any State
20 or political subdivision of a State.

21 “(g) EXEMPTIONS.—

22 “(1) IN GENERAL.—The Administrator shall,
23 by regulation, exempt from the restrictions on the
24 lead content of paint described in subsection
25 (a)(1)—

1 “(A) any paint that is imported, processed,
2 manufactured, or distributed in commerce for
3 use by an artist (including any graphic artist)
4 in a work of art if the paint is sold or otherwise
5 distributed in a package labeled pursuant to the
6 requirements under section 405(c)(1); and

7 “(B) during the 5-year period beginning on
8 the date of enactment of this section, zinc-en-
9 riched industrial paint with respect to which the
10 incidental presence of lead does not exceed 0.19
11 percent lead by dry weight.

12 “(2) EXEMPTIONS.—The Administrator shall,
13 by regulation, exempt from the applicable restric-
14 tions on lead content under subsection (a) or (b) any
15 product, or group of products, within a product cat-
16 egory used—

17 “(A) for a medical purpose (as defined by
18 the Administrator, in consultation with the Sec-
19 retary of Health and Human Services);

20 “(B) for a purpose in the paramount inter-
21 est of the United States (as determined by the
22 Administrator, in consultation with the Sec-
23 retary of Defense);

24 “(C) for radiation protection (as jointly de-
25 fined by the Administrator and the Nuclear

1 Regulatory Commission), including any product
2 or product category used in connection with the
3 national security programs of the Department
4 of Energy;

5 “(D) in the mining industry to determine
6 the presence of noble metals in geological mate-
7 rials; or

8 “(E) as radiation shielding in any elec-
9 tronic device, or in specialized electronics uses
10 in any case in which the Administrator has de-
11 termined that no appropriate substitute for lead
12 is available.

13 “(3) STATUTORY CONSTRUCTION.—Nothing in
14 this section or the Lead Exposure Reduction Act of
15 1993 and the amendments made by such Act is in-
16 tended to prohibit the recycling (for use as a raw
17 material or for processing), recovery, or reuse of
18 lead-containing metal, glass, plastic, paper, or tex-
19 tiles, except that any product manufactured or proc-
20 essed from the lead-containing materials shall meet
21 the requirements (including standards) of this sec-
22 tion.”.

1 **SEC. 104. INVENTORY OF LEAD-CONTAINING PRODUCTS**
 2 **AND NEW USE NOTIFICATION PROCEDURES.**

3 Title IV (15 U.S.C. 2681 et seq.), as amended by
 4 section 103 of this Act, is further amended by inserting
 5 after section 403, as redesignated by section 101(a) of this
 6 Act, the following new section:

7 **"SEC. 404. INVENTORY OF LEAD-CONTAINING PRODUCTS**
 8 **AND NEW USE NOTIFICATION PROCEDURES.**

9 **"(a) CREATION OF AN INVENTORY OF USES OF LEAD**
 10 **IN PRODUCTS IN COMMERCE.—**

11 **"(1) IN GENERAL.—**Not later than 60 days
 12 after the date of enactment of this section, the Ad-
 13 ministrator shall, with the active participation of all
 14 interested parties, initiate a survey of all lead-con-
 15 taining products sold or distributed in commerce in
 16 the United States.

17 **"(2) DEVELOPMENT OF INVENTORY.—**

18 **"(A) IN GENERAL.—**On the basis of the
 19 survey described in paragraph (1), the Adminis-
 20 trator shall develop an inventory of all lead-con-
 21 taining products sold or distributed in com-
 22 merce (referred to in this section as the 'inven-
 23 tory').

24 **"(B) PRODUCT CATEGORIES.—**In develop-
 25 ing the inventory, the Administrator may group

1 in product categories those products that meet
2 both of the following criteria:

3 “(i) The products are functionally
4 similar.

5 “(ii) The products provide similar op-
6 portunities for lead exposure or release
7 during manufacturing, processing, or use,
8 or at the end of the useful life of the prod-
9 uct (taking into account other applicable
10 regulations).

11 “(3) PUBLICATION OF DRAFT INVENTORY.—

12 “(A) IN GENERAL.—The Administrator
13 shall—

14 “(i) publish the inventory in the Fed-
15 eral Register in draft form; and

16 “(ii) solicit public comment on the
17 draft inventory.

18 “(B) PUBLICATION.—Not later than 2
19 years after the date of enactment of this sec-
20 tion, after providing public notice and oppor-
21 tunity for comment on the draft inventory, the
22 Administrator shall publish a final inventory.

23 “(4) PRODUCTS CONTAINING COMPONENTS IN-
24 CLUDED ON INVENTORY.—For the purposes of this
25 section, any product that contains lead-containing

1 components included on the inventory shall be
2 deemed to be included on the inventory.

3 “(5) FAILURE OF ADMINISTRATOR TO PUBLISH
4 INVENTORY.—If the Administrator fails to publish
5 the inventory by the date specified in paragraph
6 (3)(B), the list of products referred to in subsection
7 (c)(6) shall be deemed to comprise the inventory.

8 “(6) MODIFICATIONS.—The Administrator may,
9 from time to time, after notice and opportunity for
10 comment, make modifications to the inventory pub-
11 lished under this subsection. If the Administrator
12 modifies the inventory, the Administrator shall pub-
13 lish the modified inventory.

14 “(b) LIST OF USES OF LEAD IN PRODUCTS THAT
15 POSE EXPOSURE CONCERNS.—

16 “(1) IN GENERAL.—Beginning on the date that
17 is 3 years after the date of enactment of this sec-
18 tion, the Administrator shall promulgate regulations
19 that establish a list (referred to in this section as the
20 ‘list’) of lead-containing products or categories of
21 products that the Administrator determines may
22 reasonably be anticipated to present an unreasonable
23 risk of injury to human health or the environment
24 due to exposure to lead during manufacturing, proc-
25 essing, distribution in commerce or use, or at the

1 end of the useful life of the product (taking into ac-
2 count other applicable regulations).

3 “(2) CRITERIA FOR DETERMINATION TO LIST A
4 PRODUCT OR CATEGORY OF PRODUCT.—Each deter-
5 mination to list a product or category of product
6 shall be based on exposure-related information per-
7 taining to the product or category of products, or to
8 a product or category of products that poses similar
9 exposure risks.

10 “(3) SPECIFICATION OF LEAD CONCENTRA-
11 TION.—For each product or category of products,
12 the Administrator shall specify the concentration of
13 lead (as a percentage of the dry weight of the prod-
14 uct or category of products) that the Administrator
15 determines to be the maximum concentration of lead
16 found in the product or category of products.

17 “(4) MODIFICATION OF LIST.—

18 “(A) ADDITIONS TO LIST.—After promul-
19 gating the list, the Administrator may, by
20 regulation—

21 “(i) add a product or category of
22 products to the list, if the Administrator
23 determines that the product or category of
24 products meets the standard established in
25 paragraph (1); or

31

1 “(ii) remove a product or category of
2 products from the list, if the Administrator
3 determines that the product or category of
4 products does not meet the standard estab-
5 lished in paragraph (1).

6 “(B) PETITIONS FOR MODIFICATIONS.—

7 “(i) IN GENERAL.—Any person may
8 petition the Administrator to make a de-
9 termination to add a product or category
10 of products to the list, or to remove a
11 product or category of products from the
12 list.

13 “(ii) ACTION BY THE ADMINIS-
14 TRATOR.—Not later than 90 days after re-
15 ceipt of a petition under clause (i), the Ad-
16 ministrator shall take one of the following
17 actions:

18 “(I) Grant the petition, initiate a
19 procedure to promulgate a regulation
20 to add or delete the product or prod-
21 uct category as requested in the peti-
22 tion, and complete the procedure by
23 not later than 90 days after initiating
24 the procedure.

1 “(II) Deny the petition and pub-
2 lish an explanation of the basis for de-
3 nying the petition in the Federal Reg-
4 ister.

5 “(c) NOTIFICATION OF NEW USES OF LEAD IN
6 PRODUCTS IN COMMERCE.—

7 “(1) IN GENERAL.—

8 “(A) PUBLICATION.—After the publication
9 of the inventory in final form pursuant to sub-
10 section (a)(3), any person who manufactures,
11 processes, or imports a lead-containing product
12 referred to in subparagraph (B) shall submit to
13 the Administrator a notice prepared pursuant
14 to paragraph (2) on the commencement of the
15 manufacture, processing, or importation of the
16 product.

17 “(B) APPLICABILITY.—Subparagraph (A)
18 shall apply to any lead-containing product for
19 which a notice is required under subparagraph
20 (A) that—

21 “(i) is not listed in the inventory de-
22 veloped under subsection (a); or

23 “(ii) is a product that—

24 “(I) is identified on the list pro-
25 mulgated under subsection (b), or

33

1 that is included in a category of prod-
2 ucts identified on the list; and

3 “(II) utilizes a greater concentra-
4 tion of lead, as a percentage of dry
5 weight, than the concentration identi-
6 fied by the Administrator for the
7 product or category under subsection
8 (b)(3) (unless the concentration is ex-
9 ceeded on a percentage basis solely as
10 a result of efforts to reduce the size or
11 weight of the product, rather than by
12 the addition of greater quantities of
13 lead into the product).

14 “(2) CONTENTS OF NOTICE.—The notice re-
15 quired by paragraph (1) shall include—

16 “(A) a general description of the product;

17 “(B) a description of the manner in which
18 lead is used in the product;

19 “(C) the quantity of the product manufac-
20 tured, processed, or imported; and

21 “(D) the quantity and percentage of lead
22 used in the manufacturing of the product, or
23 the quantity and percentage of lead contained
24 in the imported product.

1 “(3) REPORT BY THE ADMINISTRATOR.—On an
2 annual basis, the Administrator shall publish a re-
3 port that provides a nonconfidential summary of new
4 uses identified pursuant to this subsection. The re-
5 port shall include aggregated information regarding
6 the amount of lead associated with the new uses.

7 “(4) RELATIONSHIP WITH OTHER PROVI-
8 SIONS.—The notification requirement under para-
9 graph (1) shall be subject to the confidentiality pro-
10 visions under section 5, and the research and devel-
11 opment exemption under section 5.

12 “(5) AMENDMENT OF LIST AND INVENTORY.—
13 After the receipt of a notice under paragraph (1),
14 the Administrator shall—

15 “(A) make such amendments to the inven-
16 tory established under subsection (a) as the Ad-
17 ministrator determines to be appropriate; and

18 “(B) evaluate whether any new products
19 should be added to the list established under
20 subsection (b).

21 “(6) DELAY IN PUBLICATION.—

22 “(A) IN GENERAL.—If the publication of a
23 final list is delayed beyond the date specified in
24 subsection (b), subparagraphs (B) and (C) shall
25 apply.

1 “(B) PROHIBITION.—Beginning on the
2 date that the final list is required to be promul-
3 gated under subsection (b), and until such time
4 as a final list is published, no person shall man-
5 ufacture, process, or import a product that is
6 listed or included within a product category
7 identified in subparagraph (C), if—

8 “(i) the product, or a substantially
9 similar product, has not been distributed
10 in commerce prior to the date of enact-
11 ment of this section; or

12 “(ii) the product contains a greater
13 percentage of lead than any substantially
14 similar product distributed in commerce
15 before the date of enactment of this sec-
16 tion,
17 unless the person has submitted a notice under
18 paragraph (2).

19 “(C) LIST OF PRODUCTS OR CAT-
20 EGORIES.—The list of products or categories of
21 products referred to in subparagraph (B) shall
22 be the products listed under section 403(a)(2)
23 and subsections (d) through (f) of section 403.

24 “(D) BURDEN OF PROOF.—In any pro-
25 ceeding to enforce subparagraph (B) with re-

1 spect to a product, the manufacturer, processor,
2 or importer shall have the burden of dem-
3 onstrating that the manufacturer, processor, or
4 importer had a reasonable basis for concluding
5 that the product (or a substantially similar
6 product) had been distributed in commerce
7 prior to the date of publication of the final list,
8 as referred to in subparagraph (B).

9 “(d) EXEMPTIONS.—

10 “(1) IN GENERAL.—Subsections (b) and (c)
11 shall not apply to the following:

12 “(A) Stained glass products.

13 “(B) Articles referred to in section
14 3(2)(B)(v).

15 “(C) Containers used for radiation shield-
16 ing.

17 “(2) AUTOMOTIVE DISMANTLERS.—This section
18 shall not apply to any metal, glass, paper, or textile
19 sold or distributed by the owner or operator of any
20 automotive dismantler or recycling facility regulated
21 by a State or the Administrator.”.

22 **SEC. 105. PRODUCT LABELING.**

23 Title IV (15 U.S.C. 2681, et seq.), as amended by
24 section 104 of this Act, is further amended by inserting

37

1 after section 404, as redesignated by section 101(a) of this
2 Act, the following new section:

3 **"SEC. 405. PRODUCT LABELING.**

4 **"(a) IN GENERAL.—**

5 **"(1) LABELING.—**

6 **"(A) IN GENERAL.—**Not later than 3 years
7 after the date of enactment of this section, the
8 Administrator shall promulgate regulations that
9 provide for the labeling of products included in
10 the list established under section 404(b).

11 **"(B) EXEMPTIONS.—**The regulations pro-
12 mulgated under this paragraph shall not apply
13 to—

14 **"(i)** lead-acid batteries, to the extent
15 that the labeling of the batteries as to the
16 lead content of the batteries is regulated
17 under any other Federal law; and

18 **"(ii)** products regulated under the
19 Federal Food, Drug and Cosmetic Act (21
20 U.S.C. 301 et seq.).

21 **"(C) DIFFERENTIATION IN LABELING.—**
22 The regulations promulgated under this section
23 may distinguish between labels required for
24 products—

1 “(i) that present a risk of exposure to
2 lead during manufacture or processing;
3 and

4 “(ii) that present a risk of exposure to
5 lead during distribution or use.

6 “(2) EFFECTIVE DATE OF REGULATIONS.—The
7 regulations promulgated pursuant to paragraph (1)
8 shall take effect not later than the date that is 3
9 years after the date of enactment of this section.

10 “(b) CONTENT OF REGULATIONS.—The regulations
11 described in subsection (a) shall specify the wording, type
12 size, and placement of the labels described in subsection
13 (a).

14 “(c) LABELING OF CERTAIN ITEMS.—

15 “(1) IN GENERAL.—The Administrator shall
16 promulgate regulations requiring that the following
17 labeling be included in the labeling of the packaging
18 of the following items:

19 “(A) For any paint for use by artists (in-
20 cluding graphic artists) described in section
21 403(g):

1 **'CONTAINS LEAD—FOR USE BY ADULTS ONLY.**
2 **DO NOT USE OR STORE AROUND CHILDREN**
3 **OR IN AREAS ACCESSIBLE TO CHILDREN.'**

4 “(B) For each toy or recreational game
5 piece that is a collectible item and for each
6 scale model that is subject to the regulations
7 promulgated under section 403(b)(4) and is
8 manufactured on or after the effective date of
9 the regulations promulgated under this sub-
10 section:

11 **'COLLECTIBLE ITEM, CONTAINS LEAD, NOT**
12 **SUITABLE FOR CHILDREN.'**

13 “(2) CRITERIA FOR REGULATIONS.—The regu-
14 lations promulgated pursuant to paragraph (1) shall
15 specify the type, size, and placement of the labeling
16 described in paragraph (1).

17 “(3) EFFECTIVE DATE.—Each regulation pro-
18 mulgated under paragraph (1) shall take effect on
19 the date that is 1 year after the date of the promul-
20 gation of the regulation.

21 “(4) LABELS.—If, by the date that is 2 years
22 after the date of enactment of this section, the Ad-
23 ministrator has not promulgated regulations that
24 specify the alternate type, size, and placement of the
25 wording for labels referred to in paragraph (1), the
26 wording shall be placed prominently on the package

1 in letters the same size as the largest text letter (ex-
2 cept for letters in logos or brand markings) other-
3 wise affixed to the label or packaging of the product
4 until such time as the Administrator promulgates
5 the regulations.

6 “(d) BAR ON DEFENSES.—Compliance with the la-
7 beling requirements of this section shall not constitute, in
8 whole or in part, a defense for liability relating to, or a
9 cause for reduction in damages resulting from, any civil
10 or criminal action brought under any Federal or State law,
11 other than an action brought for failure to comply with
12 the labeling requirements of this section.”.

13 **SEC. 106. RECYCLING OF LEAD-ACID BATTERIES.**

14 Title IV (15 U.S.C. 2681 et seq.), as amended by
15 section 105 of this Act, is further amended by inserting
16 after section 405, as redesignated by section 101(a) of this
17 Act, the following new section:

18 **“SEC. 406. RECYCLING OF LEAD-ACID BATTERIES.**

19 **“(a) PROHIBITIONS.—**

20 **“(1) IN GENERAL.—**Beginning on the date that
21 is 1 year after the date of enactment of this section,
22 no person shall—

23 **“(A)** place a lead-acid battery in any land-
24 fill; or

25 **“(B)** incinerate any lead-acid battery.

41

1 “(2) DISPOSAL.—No person may—

2 “(A) discard or otherwise dispose of a
3 lead-acid battery in mixed municipal solid
4 waste; or

5 “(B) discard or otherwise dispose of a
6 lead-acid battery in a manner other than by re-
7 cycling in accordance with this section.

8 “(3) EXEMPTION.—Paragraphs (1) through (2)
9 shall not apply to an owner or operator of a municipi-
10 pal solid waste landfill, incinerator, or collection pro-
11 gram that inadvertently receives any lead-acid bat-
12 tery that—

13 “(A) is commingled with other municipal
14 solid waste; and

15 “(B) is not readily removable from the
16 waste stream,

17 if the owner or operator of the facility or collection
18 program has established contractual requirements or
19 other appropriate notification or inspection proce-
20 dures to ensure that no lead-acid battery is received
21 at, or burned in, the facility or accepted through the
22 collection program.

23 “(b) GENERAL DISCARD OR DISPOSAL REQUIRE-
24 MENTS.—Beginning on the date that is 1 year after the
25 date of enactment of this section, no person (except a per-

1 son described in subsection (c), (d), or (e)) may discard
2 or otherwise dispose of any used lead-acid battery except
3 by delivery to 1 of the following persons (or an authorized
4 representative of the person):

5 “(1) A person who sells lead-acid batteries at
6 retail or wholesale.

7 “(2) A lead smelter regulated by a State or the
8 Administrator under the Solid Waste Disposal Act
9 (42 U.S.C. 6901 et seq.) or the Clean Air Act (42
10 U.S.C. 7401 et seq.).

11 “(3) A collection or recycling facility regulated
12 by a State or subject to regulation by the Adminis-
13 trator under the Solid Waste Disposal Act (42
14 U.S.C. 6901 et seq.).

15 “(4) An automotive dismantler (as defined by
16 the Administrator).

17 “(5) A curbside collection program operated by,
18 or under an agreement with, a governmental entity.

19 “(6) A manufacturer of batteries of the same
20 general type.

21 “(c) DISCARD OR DISPOSAL REQUIREMENTS FOR
22 RETAILERS.—Beginning on the date that is 1 year after
23 the date of enactment of this section, no person who sells
24 lead-acid batteries at retail may discard or otherwise dis-
25 pose of any used lead-acid battery except by delivery to

1 1 of the following persons (or an authorized representative
2 of the person):

3 “(1) A person who sells lead-acid batteries at
4 wholesale.

5 “(2) A lead smelter regulated by a State or the
6 Administrator under the Solid Waste Disposal Act
7 (42 U.S.C. 6901 et seq.) or the Clean Air Act (42
8 U.S.C. 7401 et seq.).

9 “(3) A battery manufacturer.

10 “(4) A collection or recycling facility regulated
11 by a State or subject to regulation by the Adminis-
12 trator under the Solid Waste Disposal Act (42
13 U.S.C. 6901 et seq.).

14 “(5) An automotive dismantler (as defined by
15 the Administrator).

16 “(d) DISCARD OR DISPOSAL REQUIREMENTS FOR
17 WHOLESALE AND AUTOMOTIVE DISMANTLERS.—

18 “(1) IN GENERAL.—Beginning on the date that
19 is 1 year after the date of enactment of this
20 section—

21 “(A) no person who sells lead-acid bat-
22 teries at wholesale; and

23 “(B) no automotive dismantler,
24 may discard or otherwise dispose of any used lead-
25 acid battery, except by delivery to 1 of the persons

1 described in paragraph (2) (or an authorized rep-
2 resentative of the person).

3 “(2) PERSONS.—The persons described in this
4 paragraph are as follows:

5 “(A) A lead smelter regulated by a State
6 or the Administrator under the Solid Waste
7 Disposal Act (42 U.S.C. 6901 et seq.) or the
8 Clean Air Act (42 U.S.C. 7401 et seq.).

9 “(B) A battery manufacturer.

10 “(C) A collection or recycling facility regu-
11 lated by a State or subject to regulation by the
12 Administrator under the Solid Waste Disposal
13 Act (42 U.S.C. 6901 et seq.).

14 “(e) DISCARD OR DISPOSAL REQUIREMENTS FOR
15 MANUFACTURERS.—

16 “(1) IN GENERAL.—Beginning on the date that
17 is 1 year after the date of enactment of this section,
18 no person who manufactures lead-acid batteries may
19 discard or otherwise dispose of any used lead-acid
20 battery, except by delivery to 1 of the persons de-
21 scribed in paragraph (2) (or an authorized rep-
22 resentative of the person).

23 “(2) PERSONS.—The persons described in this
24 paragraph are as follows:

1 “(A) A lead smelter regulated by a State
2 or the Administrator under the Solid Waste
3 Disposal Act (42 U.S.C. 6901 et seq.) or the
4 Clean Air Act (42 U.S.C. 7401 et seq.).

5 “(B) A collection or recycling facility regu-
6 lated by a State or subject to regulation by the
7 Administrator.

8 “(f) COLLECTION REQUIREMENTS FOR RETAIL-
9 ERS.—Beginning on the date that is 1 year after the date
10 of enactment of this section, a person who sells, or offers
11 for sale, lead-acid batteries at retail shall accept from cus-
12 tomers used lead-acid batteries of the same type as the
13 batteries sold and in a quantity approximately equal to
14 the number of batteries sold. The used lead-acid batteries
15 shall be accepted at the place where lead-acid batteries are
16 offered for sale.

17 “(g) COLLECTION REQUIREMENTS FOR WHOLE-
18 SALERS.—

19 “(1) IN GENERAL.—Beginning on the date that
20 is 1 year after the date of enactment of this section,
21 a person who sells, or offers for sale, lead-acid bat-
22 teries at wholesale (referred to in this section as a
23 ‘wholesaler’) shall accept from customers used lead-
24 acid batteries of the same type as the batteries sold

1 and in a quantity approximately equal to the number
2 of batteries sold.

3 “(2) WHOLESALER WHO SELLS LEAD-ACID
4 BATTERIES TO A RETAILER.—In the case of a whole-
5 saler who sells, or offers for sale, lead-acid batteries
6 to a retailer, the wholesaler shall also provide for re-
7 moving used lead-acid batteries at the place of busi-
8 ness of the retailer. Unless the quantity of batteries
9 to be removed is less than 5, the removal shall occur
10 not later than 90 days after the retailer notifies the
11 wholesaler of the existence of the used lead-acid bat-
12 teries for removal. If the quantity of batteries to be
13 removed is less than 5, the wholesaler shall remove
14 the batteries not later than 180 days after the noti-
15 fication referred to in the preceding sentence.

16 “(h) COLLECTION REQUIREMENTS FOR MANUFAC-
17 TURERS.—Beginning on the date that is 1 year after the
18 date of enactment of this section, a person who manufac-
19 tures lead-acid batteries shall accept from customers used
20 lead-acid batteries of the same type as the batteries sold
21 and in a quantity approximately equal to the number of
22 batteries sold.

23 “(i) WRITTEN NOTICE REQUIREMENTS FOR RETAIL-
24 ERS.—

1 “(1) IN GENERAL.—Beginning on the date that
2 is 1 year after the date of enactment of this section,
3 a person who sells, or offers for sale, lead-acid bat-
4 teries at retail shall post written notice that—

5 “(A) is clearly visible in a public area of
6 the establishment in which the lead-acid bat-
7 teries are sold or offered for sale;

8 “(B) is at least 8½ inches by 11 inches in
9 size; and

10 “(C) contains the following language:

11 “(i) ‘It is illegal to throw away a
12 motor vehicle battery or other lead-acid
13 battery.’.

14 “(ii) ‘Recycle your used batteries.’.

15 “(iii) ‘Federal law requires battery re-
16 tailers to accept used lead-acid batteries
17 for recycling when a battery is purchased.’.

18 “(iv) ‘Federal law allows you to sell or
19 return used batteries to an authorized bat-
20 tery collector, recycler, or processor, or to
21 an automotive dismantler.’.

22 “(2) FAILURE TO POST NOTICE.—Any person
23 who, after receiving a written warning by the Ad-
24 ministrators, fails to post a notice required under
25 paragraph (1) shall, notwithstanding section 16, be

1 subject to a civil penalty in an amount not to exceed
2 \$1,000 per day.

3 “(j) LEAD-ACID BATTERY LABELING REQUIRE-
4 MENTS.—

5 “(1) IN GENERAL.—Beginning on the date that
6 is 18 months after the date of enactment of this sec-
7 tion, it shall be unlawful for any lead-acid battery
8 manufacturer to sell, or offer for sale, any lead-acid
9 battery that does not bear a permanent label that
10 contains the statements required under paragraph
11 (3).

12 “(2) SALES.—Beginning on the date that is 2
13 years after the date of enactment of this section, it
14 shall be unlawful to sell a lead-acid battery that does
15 not bear a permanent label that contains the state-
16 ments required under paragraph (3).

17 “(3) LABELS.—A label described in paragraph
18 (1) or (2) shall be considered to be consistent with
19 the requirements of this section if the label—

20 “(A) identifies that the lead-acid battery
21 contains lead; and

22 “(B) contains the following statements:

23 “(i) ‘Federal law requires recycling.’

24 “(ii) ‘Retailers must accept in ex-
25 change.’

1 “(4) RECYCLING SYMBOLS.—Nothing in this
2 section shall be interpreted as prohibiting the display
3 on the label of a lead-acid battery a recycling symbol
4 (as defined by the Administrator) or other informa-
5 tion intended to encourage recycling.

6 “(k) PUBLICATION OF NOTICE.—Not later than 6
7 months after the date of enactment of this section, the
8 Administrator shall publish in the Federal Register a no-
9 tice of the requirements of this section and such other re-
10 lated information as the Administrator determines to be
11 appropriate.

12 “(l) WARNINGS AND CITATIONS.—The Administrator
13 may issue a warning or citation (or both) to any person
14 who fails to comply with any provision of this section.

15 “(m) EXPORT FOR PURPOSES OF RECYCLING.—Not-
16 withstanding any other provision of this section, any per-
17 son may export any used lead-acid battery for the purpose
18 of recycling.

19 “(n) STUDY.—

20 “(1) IN GENERAL.—Not later than 18 months
21 after the date of enactment of this section, the Ad-
22 ministrator shall—

23 “(A) conduct a study on the recycling and
24 disposal of small-sealed consumer lead-acid bat-

1 teries and submit a report on the results of the
2 study to Congress; and

3 “(B) publish in the Federal Register
4 either—

5 “(i) a proposed rule to regulate the
6 recycling and disposal of small-sealed
7 consumer lead-acid batteries; or

8 “(ii) with respect to the batteries re-
9 ferred to in clause (i), a determination that
10 regulations are not needed to protect
11 human health and the environment.

12 “(2) CONTENTS OF STUDY AND REPORT.—The
13 study and report referred to in paragraph (1) shall
14 include an assessment of—

15 “(A) the quantity (expressed in volume) of
16 new small-sealed consumer lead-acid batteries
17 produced annually and an estimate of the quan-
18 tity of the batteries disposed of annually in mu-
19 nicipal solid waste landfills and incinerators;

20 “(B) the feasibility of recycling used small-
21 sealed consumer lead-acid batteries (including
22 an assessment of potential collection systems,
23 technologies for recovering reusable materials
24 from the batteries, and the cost of recycling the
25 batteries); and

1 “(C) such other information as the Admin-
2 istrator determines to be appropriate with re-
3 spect to disposal practices of small-sealed
4 consumer lead-acid batteries that are current at
5 the time of the study and potential alternatives
6 to the practices.

7 “(3) INVESTIGATION.—

8 “(A) IN GENERAL.—In carrying out the
9 study and preparing the report, the Adminis-
10 trator may—

11 “(i) undertake such original investiga-
12 tions as the Administrator determines to
13 be necessary to generate the data required
14 to make findings for the report; or

15 “(ii) rely on data generated and com-
16 piled by any industry or other organization
17 with an interest in the report.

18 “(B) SUBMITTAL OF CONFIDENTIAL IN-
19 FORMATION.—Any person who submits con-
20 fidential information to the Administrator pur-
21 suant subparagraph (A) shall also submit data
22 that is publicly available.

23 “(o) EXEMPTION.—

1 “(1) **IN GENERAL.**—Except as provided in para-
2 graph (2), this section shall not apply to small-
3 sealed consumer lead-acid batteries.

4 “(2) **EXCEPTION.**—Subsection (n) shall apply
5 to small-sealed lead-acid batteries.

6 “(p) **DEFINITIONS.**—As used in this section:

7 “(1) **LEAD-ACID BATTERY.**—The term ‘lead-
8 acid battery’ means a battery that—

9 “(A) consists of lead and sulfuric acid; and

10 “(B) is used as a power source.

11 “(2) **SMALL-SEALED CONSUMER LEAD-ACID**
12 **BATTERY.**—The term ‘small-sealed consumer lead-
13 acid battery’ means a lead-acid battery, weighing 25
14 pounds or less, used in non-vehicular, non-SLI
15 (starting, lighting, and ignition) applications.”.

16 **SEC. 107. LEAD CONTAMINATION IN SCHOOLS AND DAY**
17 **CARE FACILITIES.**

18 Title IV (15 U.S.C. 2681 et seq.), as amended by
19 section 106 of this Act, is further amended by inserting
20 after section 406, as redesignated by section 101(a) of this
21 Act, the following new section:

22 **“SEC. 407. LEAD CONTAMINATION IN SCHOOLS AND DAY**
23 **CARE FACILITIES.**

24 “(a) **DEFINITIONS.**—As used in this subsection:

1 “(1) COVERED DAY CARE FACILITY.—The term
2 ‘covered day care facility’ means—

3 “(A) the interior and exterior of any build-
4 ing constructed before 1980 that is used as a
5 day care facility that regularly provides day
6 care services for children in kindergarten or
7 younger children; and

8 “(B) any land and structure on the land,
9 and any related common grounds or playground
10 area and playground structures, that are under
11 the same ownership as the building referred to
12 in subparagraph (A) and that is regularly ac-
13 cessible to children in kindergarten or younger
14 children.

15 “(2) COVERED SCHOOL.—The term ‘covered
16 school’ means—

17 “(A) the interior and exterior of any build-
18 ing constructed before 1980 that is used—

19 “(i) as an elementary school (as de-
20 fined in section 1471(8) of the Elementary
21 and Secondary Education Act of 1965 (20
22 U.S.C. 2891(8))); or

23 “(ii) as a kindergarten that regularly
24 provides education for children in kinder-
25 garten or younger children; and

1 “(B) any land and structure on the land,
2 and any related common grounds or playground
3 area and playground structures, that are under
4 the same ownership as the building referred to
5 in subparagraph (A) and that is regularly ac-
6 cessible to children in kindergarten or younger
7 children.

8 “(3) DAY CARE FACILITY.—The term ‘day care
9 facility’ means any portion of a facility used for day
10 care for children in kindergarten or younger children
11 and owned or operated by a person that provides the
12 day care for compensation, and that—

13 “(A) is licensed or regulated under State
14 law for day care purposes; or

15 “(B) receives Federal funds for day care
16 purposes.

17 “(4) LEAD HAZARD.—The term ‘lead hazard’
18 means—

19 “(A) lead-based paint that is chipping,
20 peeling, flaking, or chalking;

21 “(B) any surface coated with lead-based
22 paint that is subject to abrasion;

23 “(C) any surface coated with lead-based
24 paint that can be mouthed by a child under 6
25 years of age; and

1 “(D) interior dust that contains a dan-
2 gerous level of lead, as identified by the Admin-
3 istrator.

4 “(5) LEAD INSPECTION.—The term ‘lead in-
5 spection’ means an inspection to detect the presence
6 of any lead-based paint or lead hazard.

7 “(6) LOCAL EDUCATION AGENCY.—The term
8 ‘local education agency’ means—

9 “(A) any local educational agency (as de-
10 fined in section 1471(12) of the Elementary
11 and Secondary Education Act of 1965 (20
12 U.S.C. 2891(12)));

13 “(B) the owner of any private nonprofit el-
14 ementary or secondary school building; and

15 “(C) the governing authority of any school
16 operating under the defense dependents’ edu-
17 cation system provided for under the Defense
18 Dependents’ Education Act of 1978 (20 U.S.C.
19 921 et seq.).

20 “(7) OWNER OR OPERATOR.—The term ‘owner
21 or operator’, when used with respect to a school,
22 means the local education agency that has jurisdic-
23 tion over the school.

24 “(8) SIGNIFICANT USE.—The term ‘significant
25 use’ means use by more than 1 child at least 2 times

1 per week, and for a total period of at least 2 hours
2 per week.

3 “(b) COVERED SCHOOLS AND COVERED DAY CARE
4 FACILITIES.—

5 “(1) IN GENERAL.—Except as provided in sub-
6 section (d)(4), not later than 1 year after the date
7 of enactment of this section, the Administrator shall
8 promulgate regulations that shall be adequate to
9 carry out this section and be consistent with other
10 regulations promulgated by the Administrator under
11 this title.

12 “(2) REGULATIONS.—Pursuant to paragraph
13 (1), the Administrator shall promulgate regulations
14 that require each State that receives a grant under
15 subsection (d) to—

16 “(A) not later than 3 years after the date
17 of promulgation of the regulations or the date
18 on which amounts are allotted to the State
19 under subsection (d)(2), whichever is later,
20 conduct—

21 “(i) an inspection of each covered
22 school and covered day care facility to de-
23 tect lead-based paint that is chipping, peel-
24 ing, flaking, or chalking; and

1 “(ii) an inspection of each room at
2 each covered school and covered day care
3 facility that is used daily or receives sig-
4 nificant use by children in kindergarten or
5 by younger children for the purpose of de-
6 tecting any lead-based paint or interior
7 dust in the rooms of the school or day care
8 facility that contains a dangerous level of
9 lead, as identified by the Administrator
10 pursuant to section 411; and

11 “(B) prepare a report that includes—

12 “(i) the results of the inspections re-
13 ferred to in subparagraph (A); and

14 “(ii) recommendations as to whether
15 any lead hazard detected pursuant to an
16 inspection should be alleviated through en-
17 capsulation, in-place management, or other
18 form of abatement.

19 “(3) RANKING.—In conducting inspections of
20 covered schools and covered day care facilities re-
21 quired by paragraph (2), the appropriate official of
22 the State shall—

23 “(A) rank areas in the State in order of
24 the severity of the suspected lead hazard of the

1 areas, in accordance with procedures that the
2 Administrator shall establish; and

3 “(B) give priority to inspecting covered
4 schools and covered day care facilities located in
5 areas with the greatest suspected lead hazard.

6 “(4) PROCEDURES.—The procedures referred
7 to in paragraph (3) shall use factors for assessing
8 an area, including—

9 “(A) medical evidence regarding the extent
10 of lead poisoning (as determined through lead
11 screening) of children in the area;

12 “(B) the ages of children in the area;

13 “(C) the age and condition of school build-
14 ings in the area; and

15 “(D) the age and condition of the housing
16 in the area,

17 in order to determine which areas in the State are
18 most likely to have a lead hazard.

19 “(5) DISSEMINATION OF REPORTS.—

20 “(A) IN GENERAL.—Each State shall pro-
21 vide to the owner or operator of each covered
22 school and covered day care facility of the State
23 a copy of the report required under paragraph
24 (2)(B).

1 “(B) REQUIREMENTS FOR OWNERS OR OP-
2 ERATORS.—

3 “(i) IN GENERAL.—Except as pro-
4 vided under paragraph (6), in each case in
5 which an inspection conducted pursuant to
6 the requirements of paragraph (2) indi-
7 cates the presence of lead-based paint that
8 poses a lead hazard, or interior dust con-
9 taining a dangerous level of lead (as identi-
10 fied by the Administrator pursuant to sec-
11 tion 411) at a covered school or covered
12 day care facility, the owner or operator of
13 the covered school or covered day care fa-
14 cility shall, not later than 60 days after re-
15 ceiving the report under subparagraph (A),
16 provide a copy of risk disclosure informa-
17 tion that meets the requirements of sub-
18 paragraph (C) to all teachers and other
19 school personnel and parents (or guard-
20 ians) of children attending the covered
21 school or covered day care facility con-
22 cerned.

23 “(ii) NOTIFICATION TO NEW PERSON-
24 NEL MEMBERS AND PARENTS AND GUARD-
25 IANS OF NEW STUDENTS.—During such

1 time as lead-based paint, or interior dust
2 containing a dangerous level of lead (as
3 identified by the Administrator pursuant to
4 section 411), continues to be present at the
5 covered school or covered day care facility,
6 the owner or operator of the covered school
7 or covered day care facility shall also pro-
8 vide the risk disclosure information re-
9 ferred to in clause (i) to newly hired teach-
10 ers and other personnel and parents (or
11 guardians) of newly enrolled children.

12 “(C) RISK DISCLOSURE.—

13 “(i) IN GENERAL.—As part of the
14 regulations required under paragraph (2),
15 the Administrator shall prescribe the con-
16 tents of the risk disclosure information re-
17 quired to be provided to the persons speci-
18 fied in the regulations.

19 “(ii) CONTENTS OF RISK DISCLOSURE
20 INFORMATION.—The information shall in-
21 clude each of the following, with respect to
22 each covered school or covered day care fa-
23 cility:

1 “(I) A summary of the results of
2 the inspection conducted pursuant to
3 paragraph (2).

4 “(II) A description of the risks of
5 lead exposure to children in kinder-
6 garten and younger children, teachers,
7 and other personnel at the covered
8 school or covered day care facility that
9 takes into account the accessibility of
10 lead-based paint or interior dust con-
11 taining a dangerous level of lead (as
12 identified by the Administrator pursu-
13 ant to section 411) to children in kin-
14 dergarten and younger children, and
15 other factors that the Administrator
16 determines to be appropriate.

17 “(III) A description of any abate-
18 ment undertaken, or to be under-
19 taken, by the owner or operator.

20 “(D) METHOD OF PROVIDING INFORMA-
21 TION.—An owner or operator of a covered
22 school or covered day care facility may provide
23 the risk disclosure information to the parents
24 (or guardians) of the children attending the
25 covered school or covered day care facility con-

1 cerned in the same manner as written materials
2 are regularly delivered to the parents (or guard-
3 ians).

4 “(6) EXEMPTION FROM NOTICE REQUIRE-
5 MENT.—An owner or operator of a covered school or
6 covered day care facility shall not be required to pro-
7 vide notification under paragraph (5) if, not later
8 than 180 days prior to the date on which the notifi-
9 cation would otherwise be required—

10 “(A) the owner, operator, or the State per-
11 forms encapsulation, in-place management or
12 other form of abatement;

13 “(B) the State conducts a reinspection;
14 and

15 “(C) the owner or operator obtains a re-
16 port from the State that shows that—

17 “(i) the lead-based paint that poses a
18 lead hazard; and

19 “(ii) any interior dust containing a
20 dangerous level of lead, as identified by the
21 Administrator,

22 have been removed, encapsulated, or managed
23 in place.

24 “(7) AVAILABILITY OF CERTAIN REPORTS.—In
25 lieu of notification under paragraph (5), an owner or

1 operator that elects to perform encapsulation, in-
2 place management, or other form of abatement
3 under this subsection shall—

4 “(A) make a copy of the inspection reports
5 for inspections conducted pursuant to this sub-
6 section available in each administrative office of
7 the owner or operator; and

8 “(B) notify parent, teacher, and employee
9 organizations of the availability of the reports.

10 “(c) RENOVATED AREAS.—With respect to each ren-
11 ovation of a covered school or covered day care facility
12 that commences on or after the date that is 1 year after
13 the date of promulgation of a regulation under subsection
14 (b)(2), for each covered school or covered day care facility
15 in which a renovation will be undertaken, the owner or
16 operator of the covered school or covered day care facility
17 or the State (on the request of the owner or operator)
18 shall, prior to the renovation—

19 “(1) conduct an inspection of the area to be
20 renovated to detect any lead-based paint that could
21 be disturbed as a result of the renovation; and

22 “(2) take any action that is necessary to ensure
23 that the renovation does not result in a dangerous
24 level of lead (as identified by the Administrator pur-
25 suant to section 411), in interior dust.

1 “(d) FEDERAL ASSISTANCE.—

2 “(1) IN GENERAL.—

3 “(A) GRANTS.—The Administrator shall
4 make grants to States for the purposes of test-
5 ing, at covered schools and covered day care fa-
6 cilities, for—

7 “(i) lead-based paint that poses a lead
8 hazard; and

9 “(ii) interior dust containing a dan-
10 gerous level of lead (as identified by the
11 Administrator pursuant to section 411).

12 “(B) USE OF GRANT AWARD.—A grant
13 awarded pursuant to this subsection may be
14 used by a State only to cover expenses incurred
15 by the State after the date of enactment of this
16 section for lead hazard inspection in covered
17 schools and covered day care facilities.

18 “(2) ALLOTMENT.—For each fiscal year, from
19 amounts appropriated pursuant to the authorization
20 under subsection (j), the Administrator shall allot to
21 each State for the purpose of making grants under
22 this subsection, an amount that bears the same ratio
23 to the appropriated amounts as the number of chil-
24 dren under 7 years of age bears to the number of
25 children under age 7 in all States.

1 “(3) REALLOTMENT.—If the Administrator de-
2 termines that the amount of the allotment of any
3 State determined under paragraph (2) for any fiscal
4 year will not be required for carrying out the pro-
5 gram for which the amount has been allotted, the
6 Administrator shall make the amount available for
7 reallotment.

8 “(4) RESERVATION BY STATE.—For each fiscal
9 year, from the amounts allotted to a State under
10 paragraph (2), the State shall reserve not more than
11 5 percent of the amounts for administrative costs.

12 “(5) LIMITATION ON REQUIREMENT.—

13 “(A) IN GENERAL.—Except as provided in
14 paragraph (6), the Administrator shall require
15 each State to fulfill the requirements of sub-
16 section (a) relating to inspections only to the
17 extent that assistance under this section is
18 available to defray the costs of the inspections.

19 “(B) REQUIREMENTS FOR REGULA-
20 TIONS.—

21 “(i) IN GENERAL.—With respect to
22 any State that fails to carry out an appli-
23 cable requirement under subsection (b),
24 the Administrator shall take such action as
25 may be necessary to ensure that the State

'66

1 meets all applicable requirements of sub-
2 section (b) not later than 2 years after the
3 first day on which the cumulative total of
4 all amounts appropriated to the States
5 pursuant to the authorization under sub-
6 section (j) equals or exceeds \$90,000,000.

7 “(ii) PLAN.—With respect to any
8 State that fails to—

9 “(I) submit to the Administrator,
10 by the date that is 6 years after the
11 date of enactment of this section, a
12 plan that the Administrator deter-
13 mines adequate to complete all appli-
14 cable requirements of subsection (b)
15 by not later than 8 years after the
16 date of enactment of this section; or

17 “(II) implement the plan referred
18 to in subclause (I),
19 the Administrator shall ensure that the ac-
20 tions are completed within the 8-year pe-
21 riod referred to in subclause (I), or by not
22 later than 9 years after the date of enact-
23 ment of this section, in the case of any
24 State that fails to implement the plan.

1 “(6) REQUIREMENT FOR PAYMENTS.—No pay-
2 ments shall be made under this section for any fiscal
3 year to a State unless the Administrator determines
4 that the aggregate expenditures of the State for
5 comparable lead inspection programs for the year
6 equaled or exceeded the aggregate expenditures for
7 the most recent fiscal year for which data is avail-
8 able.

9 “(7) STATUTORY CONSTRUCTION.—Nothing in
10 this section is intended to prohibit the expenditure
11 of Federal funds for the purposes authorized under
12 this section in or by sectarian institutions. No provi-
13 sion of law (including a State constitution or State
14 law) shall be construed to prohibit the expenditure
15 in or by sectarian institutions of any Federal funds
16 provided under this section. Except as provided in
17 the preceding sentence, nothing in this section is in-
18 tended to supersede or modify any provision of State
19 law that prohibits the expenditure of public funds in
20 or by sectarian institutions.

21 “(e) PUBLIC PROTECTION.—No owner or operator of
22 a covered school or covered day care facility may discrimi-
23 nate against a person on the basis that the person pro-
24 vided information relating to a potential violation of this

1 section to any other person, including a State or the Ad-
2 ministrator.

3 “(f) PENALTIES.—

4 “(1) IN GENERAL.—Notwithstanding any other
5 provision of this Act, the amount of any penalty that
6 may be assessed for a violation of this section pursu-
7 ant to section 16 shall not exceed an amount equal
8 to \$5,000 for each day during which the violation of
9 this section continues.

10 “(2) MANNER OF ASSESSMENT.—Any civil pen-
11 alty under this subsection shall be assessed and col-
12 lected in the same manner, and subject to the same
13 provisions, as for civil penalties assessed and col-
14 lected under section 16.

15 “(3) VIOLATION DEFINED.—As used in this
16 subsection, the term ‘violation’ means a failure to
17 comply with a requirement of this section with re-
18 spect to a single covered school or covered day care
19 facility.

20 “(g) USE OF PENALTIES.—In any action against a
21 State or an owner or operator (or both) of a covered school
22 or covered day care facility for a violation of this section,
23 the court shall have the discretion to order that any civil
24 penalty collected under this subsection be used by the
25 State or the owner or operator (or both) for the cost of

1 inspection and reporting, as required under subsection
2 (b)(2), or lead-based paint abatement activities under-
3 taken for the purpose of complying with this title (or
4 both).

5 “(h) INSPECTIONS.—An inspection required under
6 this section and any abatement performed in lieu of notifi-
7 cation under this section shall be carried out by a lead-
8 based paint abatement contractor who is in compliance
9 with certification requirements under applicable Federal
10 law.

11 “(i) ANNUAL REPORTS TO ADMINISTRATOR.—Each
12 State shall, not later than 1 year after receiving assistance
13 under this section, and annually thereafter, submit to the
14 Administrator an annual report. The report shall include,
15 with respect to the State—

16 “(1) a description of the manner in which the
17 assistance provided under this section was used;

18 “(2) the number of covered schools and covered
19 day care facilities affected by the assistance;

20 “(3) an estimate of the number of children
21 served by the covered schools and covered day care
22 facilities;

23 “(4) an estimate of the magnitude and cost of
24 future efforts required to carry out this section; and

1 “(5) any other information the Administrator
2 may require.

3 “(j) AUTHORIZATION OF APPROPRIATIONS.—There
4 are authorized to be appropriated to carry out this
5 section—

6 “(1) \$30,000,000 for the fiscal year 1994;

7 “(2) \$30,000,000 for the fiscal year 1995; and

8 “(3) \$30,000,000 for the fiscal year 1996.”.

9 **SEC. 108. BLOOD-LEAD AND OTHER ABATEMENT AND**
10 **MEASUREMENT PROGRAMS.**

11 Title IV (15 U.S.C. 2681 et seq.), as amended by
12 section 107 of this Act, is further amended by inserting
13 after section 407, as redesignated by section 101(a) of this
14 Act, the following new section:

15 **“SEC. 408. BLOOD-LEAD AND OTHER ABATEMENT AND**
16 **MEASUREMENT PROGRAMS.**

17 “(a) STANDARDS FOR BLOOD ANALYSIS LABORA-
18 TORIES.—

19 “(1) IN GENERAL.—

20 “(A) STANDARDS FOR LABORATORY ANAL-
21 YSIS.—The Secretary of Health and Human
22 Services (referred to in this subsection as the
23 ‘Secretary’), acting through the Director of the
24 Centers for Disease Control, shall establish pro-
25 tocols, criteria, and minimum performance

standards for the laboratory analysis of lead in blood.

“(B) CERTIFICATION PROGRAM.—

“(i) IN GENERAL.—Except as provided in clause (ii) and paragraph (4), not later than 18 months after the date of enactment of this section, the Secretary shall establish a certification program to ensure the quality and consistency of laboratory analyses.

“(ii) EXEMPTION.—If the Secretary determines, by the date specified in subparagraph (A), that effective voluntary accreditation programs are in place and operating on a nationwide basis at the time of the determination, the Secretary shall not be required to establish the certification program referred to in clause (i).

“(2) REPORTING REQUIREMENT.—The quality control program established by the Secretary under this subsection shall provide for the reporting of the results of blood-lead analyses to the Director of the Centers for Disease Control on an ongoing basis. Each report prepared pursuant to this paragraph

1 shall be in such form as the Secretary shall require
2 by regulation.

3 “(3) LIST.—Not later than 2 years after the
4 date of enactment of this section, and annually
5 thereafter, the Secretary shall publish and make
6 available to the public a list of certified or accredited
7 blood analysis laboratories.

8 “(4) REVIEW OF VOLUNTARY ACCREDITA-
9 TION.—

10 “(A) IN GENERAL.—If the Secretary deter-
11 mines, under paragraph (1)(B)(ii), that effec-
12 tive voluntary accreditation programs are in ef-
13 fect for blood analysis laboratories, the Sec-
14 retary shall review the performance and effec-
15 tiveness of the programs not later than 3 years
16 after the date of the determination, and every
17 3 years thereafter.

18 “(B) EFFECT OF NEGATIVE DETERMINA-
19 TION.—If, on making a review under this para-
20 graph, the Secretary determines that the vol-
21 untary accreditation programs reviewed are not
22 effective in ensuring the quality and consistency
23 of laboratory analyses, the Secretary shall, not
24 later than 1 year after the date of the deter-

1 mination, establish a certification program that
2 meets the requirements of paragraph (1)(B).

3 “(b) CLASSIFICATION OF ABATEMENT WASTES.—

4 Not later than 6 months after the date of enactment of
5 this section, the Administrator shall issue guidelines for
6 the management of lead-based paint abatement debris.
7 The guidelines shall describe steps for segregating wastes
8 from lead-based paint abatement projects in order to mini-
9 mize the volume of material qualifying as hazardous solid
10 waste.

11 “(c) SOIL LEAD GUIDELINES.—

12 “(1) IN GENERAL.—Not later than 2 years
13 after the date of enactment of this section, the Ad-
14 ministrator shall issue guidelines concerning—

15 “(A) action levels for lead in soil; and

16 “(B) mitigation recommendations.

17 “(2) REQUIREMENTS FOR GUIDELINES.—The
18 guidelines under this subsection establishing action
19 levels and mitigation recommendations shall take
20 into account different soil types, land uses, and
21 other site-related characteristics affecting lead expo-
22 sure conditions and levels of lead in blood.

23 “(d) STUDY OF LEAD IN USED OIL.—

24 “(1) IN GENERAL.—Not later than 18 months
25 after the date of enactment of this section, the Ad-

1 administrator shall conduct a study concerning the ef-
2 fects on the environment and public health of burn-
3 ing used oil.

4 “(2) REPORT.—On the completion of the study,
5 the Secretary shall submit a report to Congress on
6 the results of the study.

7 “(3) CONTENTS OF STUDY.—The study shall
8 include an assessment of—

9 “(A) the volume of lead in used oil released
10 into the environment, and the sources of the
11 lead contaminants;

12 “(B) the impact of a variety of approaches
13 to regulation of used oil recycling facilities; and

14 “(C) such other information as the Admin-
15 istrator determines to be appropriate regarding
16 disposal practices of lead in used oil in use at
17 the time of the study and alternatives to the
18 practices, including the manner in which any
19 detrimental effects on the environment or public
20 health (or both) can be reduced or eliminated
21 by the reduction of lead as a constituent of
22 used oil.

23 “(e) COORDINATOR FOR LEAD ACTIVITIES.—Not
24 later than 30 days after the date of enactment of this sec-
25 tion, the Administrator shall appoint, from among the em-

1 ployees of the Environmental Protection Agency, a Coordi-
 2 nator for Lead Activities to coordinate the activities con-
 3 ducted by the Agency (or in conjunction with the Agency)
 4 relating to the prevention of lead poisoning, the reduction
 5 of lead exposure, and lead abatement.”.

6 **SEC. 109. ESTABLISHMENT OF NATIONAL CENTERS FOR**
 7 **THE PREVENTION OF LEAD POISONING.**

8 Title IV (15 U.S.C. 2681 et seq.), as amended by
 9 section 108 of this Act, is further amended by inserting
 10 after section 408, as redesignated by section 101(a) of this
 11 Act, the following new section:

12 **“SEC. 409. ESTABLISHMENT OF NATIONAL CENTERS FOR**
 13 **THE PREVENTION OF LEAD POISONING.**

14 **“(a) ESTABLISHMENT AND RESPONSIBILITIES.—**

15 **“(1) IN GENERAL.—**The Administrator shall es-
 16 tablish a grant program to establish 1 or more Cen-
 17 ters for the Prevention of Lead Poisoning. (Each
 18 such Center is referred to in this subsection as a
 19 ‘Center’.)

20 **“(2) GRANTS.—**The Administrator shall award
 21 grants to 1 or more institutions of higher education
 22 (as defined in 1201(a) of the Higher Education Act
 23 of 1965 (20 U.S.C. 1141(a)) in the United States
 24 for the purpose of establishing and funding a Cen-
 25 ter. Each Center shall assist the Administrator in

1 carrying out this title, including providing for the
2 transfer of technology and serving as a source of in-
3 formation to the general public.

4 “(b) APPLICATIONS.—The Administrator shall solicit
5 applications from institutions of higher education of the
6 United States for the establishment of a Center. The ap-
7 plication shall be in such form, and contain such informa-
8 tion, as the Administrator may require by regulation.

9 “(c) SELECTION CRITERIA.—The Administrator shall
10 select each grant recipient from among the applicant insti-
11 tutions referred to in subsection (b) in accordance with
12 the following criteria:

13 “(1) The capability of the applicant institution
14 to provide leadership in making national contribu-
15 tions to the prevention of lead poisoning.

16 “(2) The demonstrated capacity of the appli-
17 cant institution to conduct relevant research.

18 “(3) The appropriateness of the projects pro-
19 posed to be carried out by the applicant institution.

20 “(4) The assurance of the applicant institution
21 of a commitment of at least \$100,000 in budgeted
22 institutional funds to relevant research upon receipt
23 of the grant.

1 “(5) The presence at the applicant institution
2 of an interdisciplinary staff with demonstrated ex-
3 pertise in lead poisoning prevention.

4 “(6) The demonstrated ability of the applicant
5 institution to disseminate the results of relevant re-
6 search and educational programs through an inter-
7 disciplinary continuing education program.

8 “(7) Any other criteria that the Administrator
9 determines to be appropriate.

10 “(d) FEDERAL SHARE AND DURATION OF GRANT.—

11 “(1) FEDERAL SHARE.—The Federal share of a
12 grant under this section shall not exceed an amount
13 equal to 95 percent of the cost of establishing and
14 operating a Center and related research activities
15 carried out by the Center.

16 “(2) DURATION OF GRANT.—A grant awarded
17 under this section shall be for a period of not more
18 than 2 years.”.

19 **SEC. 110. CONFORMING AMENDMENTS.**

20 (a) CROSS-REFERENCES.—

21 (1) PENALTIES.—Section 16 (15 U.S.C. 2615)
22 is amended by striking “409” each place it appears
23 and inserting “417”.

1 (2) SPECIFIC ENFORCEMENT AND SEIZURE.—
 2 Section 17(a)(1)(A) (15 U.S.C. 2616(a)(1)(A)) is
 3 amended by striking “409” and inserting “417”.

4 (3) AUTHORIZED STATE PROGRAMS.—Section
 5 412, as redesignated by section 101(a), is
 6 amended—

7 (A) by striking “402 or 406” each place it
 8 appears and inserting “410 or 414”; and

9 (B) in subsection (d), by striking “402”
 10 and inserting “410”.

11 (b) AUTHORIZATION OF APPROPRIATIONS.—In sec-
 12 tion 420, as redesignated by section 101(a) of this Act,
 13 by striking “There are authorized” and inserting “Except
 14 as provided in section 407(j) and in title III of the Lead
 15 Exposure Reduction Act of 1993, there are authorized”.

16 **SEC. 111. AMENDMENT TO TABLE OF CONTENTS.**

17 The table of contents in section 1 of the Act (15
 18 U.S.C. 2601 et seq.) is amended by striking the items re-
 19 lating to title IV and inserting the following new items:

“TITLE IV—LEAD EXPOSURE REDUCTION

 “Sec. 401. Findings and policy.

 “Sec. 402. Definitions.

 “Sec. 403. Restrictions on continuing uses of certain lead-containing products.

 “Sec. 404. Inventory of lead-containing products and new use notification pro-
 cedures.

 “Sec. 405. Product labeling.

 “Sec. 406. Recycling of lead-acid batteries.

 “Sec. 407. Lead contamination in schools and day care facilities.

 “Sec. 408. Blood-lead and other abatement and measurement programs.

 “Sec. 409. Establishment of National Centers for the Prevention of Lead Poi-
 soning.

- "Sec. 410. Lead-based paint activities training and certification.
- "Sec. 411. Identification of dangerous levels of lead.
- "Sec. 412. Authorized State programs.
- "Sec. 413. Lead abatement and measurement.
- "Sec. 414. Lead hazard information pamphlet.
- "Sec. 415. Regulations.
- "Sec. 416. Control of lead-based paint hazards at Federal facilities.
- "Sec. 417. Prohibited acts.
- "Sec. 418. Relationship to other Federal law.
- "Sec. 419. General provisions relating to administrative proceedings.
- "Sec. 420. Authorization of appropriations."

TITLE II—MISCELLANEOUS

SEC. 201. REPORTING OF BLOOD-LEAD LEVELS; BLOOD- LEAD LABORATORY REFERENCE PROJECT.

(a) REPORTING OF BLOOD-LEAD LEVELS.—

(1) IN GENERAL.—The Secretary of Health and Human Services (referred to in this section as the "Secretary"), acting through the Director of the Centers for Disease Control (referred to in this section as the "Director"), shall identify methods for reporting blood-lead levels in a standardized format by State public health officials to the Director.

(2) REPORT TO CONGRESS.—Not later than 18 months after the date of enactment of this Act, the Secretary shall submit a report to Congress that—

(A) describes the status of blood-lead reporting; and

(B) evaluates the feasibility and desirability of instituting a national requirement for mandatory preschool blood-lead screening.

1 (3) **ADDITIONAL REPORT.**—Not later than 2
2 years after the date of enactment of this Act, the
3 Secretary, in consultation with the Secretary of
4 Labor and the Administrator of the Environmental
5 Protection Agency, shall submit a report to Congress
6 that assesses the effectiveness of the blood-lead re-
7 porting provisions under the regulations establishing
8 the accreditation and certification programs for
9 blood analysis laboratories described in section
10 408(a) of the Toxic Substances Control Act (as
11 added by section 108).

12 (b) **ESTABLISHMENT OF BLOOD-LEAD LABORATORY**
13 **REFERENCE PROJECT.**—Subpart 2 of part C of title IV
14 of the Public Health Service Act (42 U.S.C. 258b et seq.),
15 is amended by adding at the end the following new section:
16 **“SEC. 424. BLOOD-LEAD LABORATORY REFERENCE**
17 **PROJECT.**

18 “The Secretary of Health and Human Services, act-
19 ing through the Director of the Centers for Disease Con-
20 trol, shall establish a blood-lead laboratory reference
21 project to assist States and local governments in establish-
22 ing, maintaining, improving, and ensuring the quality of
23 laboratory measurements performed for lead poisoning
24 prevention programs. The project shall include—

1 “(1) collaboration with manufacturers of ana-
2 lytical instruments to develop blood-lead measure-
3 ment devices that are accurate, portable, precise,
4 rugged, reliable, safe, and of reasonable cost;

5 “(2) the development of improved techniques
6 for safe, contamination-free blood sample collection;
7 and

8 “(3) assistance to State and local laboratories
9 in the form of reference materials, equipment, sup-
10 plies, training, consultation, and technology develop-
11 ment for quality assurance, capacity expansion, and
12 technology transfer.”.

13 **SEC. 202. UPDATE OF 1988 REPORT TO CONGRESS ON**
14 **CHILDHOOD LEAD POISONING.**

15 (a) **IN GENERAL.**—Not later than 2 years after the
16 date of enactment of this Act, and every 2 years thereafter
17 until the date that is 10 years after the date of enactment
18 of this Act, and as necessary thereafter, the Administrator
19 of the Agency for Toxic Substances and Disease Registry
20 shall submit to Congress a report that updates the report
21 submitted pursuant to section 118(f)(1) of the Superfund
22 Amendments and Reauthorization Act of 1986. Each up-
23 dated report shall include, at a minimum, revised esti-
24 mates of the prevalence of elevated lead levels among chil-
25 dren and adults in the population of the United States,

1 and estimates of the prevalence of adverse health out-
2 comes associated with lead exposure. The initial report
3 under this section shall include an assessment of the po-
4 tential contribution to elevated blood lead levels in children
5 from exposure to sources of lead in schools and day care
6 centers.

7 (b) FUNDING.—The costs of preparing and submit-
8 ting the updated reports referred to in subsection (a) shall
9 be paid from the Hazardous Substance Superfund estab-
10 lished under section 9507 of the Internal Revenue Code
11 of 1986.

12 **SEC. 203. ADDITIONAL CONFORMING AMENDMENTS.**

13 (a) AMENDMENT TO THE FAIR PACKAGING AND LA-
14 BELING ACT.—Section 11 of the Fair Packaging and La-
15 beling Act (15 U.S.C. 1460) is amended—

16 (1) in subsection (b), by striking “or” at the
17 end;

18 (2) in subsection (c), by striking the period at
19 the end and inserting “; or”; and

20 (3) by adding at the end the following new sub-
21 section:

22 “(d) The Lead Exposure Reduction Act of 1993 and
23 the amendments made by such Act.”.

24 (b) AMENDMENTS TO THE FEDERAL FOOD, DRUG
25 AND COSMETIC ACT.—

1 (1) TIME-BASED REQUIREMENTS.—Section 402
2 of the Federal Food, Drug, and Cosmetic Act (21
3 U.S.C. 342) is amended by adding at the end the
4 following new subsections:

5 “(f) For the third 1-year period after the date of en-
6 actment of this subsection and thereafter, if any package
7 or packaging component (including any solder or flux)
8 used in packaging the food contains any lead that has been
9 intentionally introduced into the package or component.

10 “(g) If the incidental presence of lead in any package
11 or packaging component (including any solder or flux)
12 used in packaging the food exceeds—

13 “(1) for the third 1-year period after the date
14 of enactment of this subsection, 600 parts per mil-
15 lion (0.06 percent);

16 “(2) for the fourth 1-year period after the date
17 of enactment of this subsection, 250 parts per mil-
18 lion (0.025 percent); and

19 “(3) for the fifth 1-year period after the date
20 of enactment of this subsection and thereafter, 100
21 parts per million (0.01 percent).”.

22 (2) CERAMIC WARE; PROCESSED FOODS;
23 WINE.—Title IV of such Act (21 U.S.C. 341 et seq.)
24 is amended by adding at the end the following new
25 section:



1 **"SEC. 413. LEAD REGULATIONS.**

2 “(a) CERAMIC WARES.—Not later than 18 months
3 after the date of enactment of this section, the Secretary
4 shall promulgate regulations to establish such standards
5 and testing procedures with respect to lead in ceramic
6 wares as are necessary to make food that contacts the
7 ware not adulterated as containing an added substance
8 under section 402(a)(1).

9 “(b) CRYSTAL WARES.—Not later than 30 months
10 after the date of enactment of this section, the Secretary
11 shall promulgate regulations to establish such standards
12 and testing procedures with respect to lead in crystal
13 wares as are necessary to make food that contacts the
14 ware not adulterated as containing an added substance
15 under section 402(a)(1).

16 “(c) PROCESSED FOODS.—Not later than 2 years
17 after the date of enactment of this section, the Secretary
18 shall promulgate regulations to reduce lead in processed
19 foods. The regulations shall determine the processed foods
20 and related manufacturing practices that are significant
21 sources of lead in the human diet and require the greatest
22 degree of reduction of lead in the foods that is achievable
23 in practice.

24 “(d) WINE.—Not later than 1 year after the date of
25 enactment of this section, the Secretary shall promulgate
26 regulations to establish such tolerance level and testing

1 procedures with respect to lead in wine as the Secretary
2 determines to be necessary to protect public health.

3 (3) PROHIBITION RELATING TO CERAMIC
4 WARE.—Section 301 of such Act (21 U.S.C. 331) is
5 amended by adding at the end the following new
6 subsections:

7 “(u) Beginning on the date that is 180 days after
8 the date of promulgation of regulations under section
9 413(a), the introduction or delivery into interstate com-
10 merce of any ceramic ware that is not in compliance with
11 the regulations.

12 “(v) Beginning on the date that is 180 days after
13 the date of promulgation of regulations under section
14 413(b), the introduction or delivery into interstate com-
15 merce of any crystal ware that is not in compliance with
16 the regulations.

17 “(w) Beginning on the date that is 180 days after
18 the date of promulgation of regulations under section
19 413(c), the introduction, or delivery for introduction, into
20 commerce of any processed food, or other action, in viola-
21 tion of section 413(c).”.

TITLE III—AUTHORIZATION OF APPROPRIATIONS

SEC. 301. AUTHORIZATION OF APPROPRIATIONS.

Except as provided in the amendment made by section 107 of this Act, to carry out this Act and the amendments made by this Act—

- (1) \$25,000,000 for fiscal year 1994;
- (2) \$24,000,000 for fiscal year 1995;
- (3) \$24,000,000 for fiscal year 1996; and
- (4) \$22,000,000 for fiscal year 1997.

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